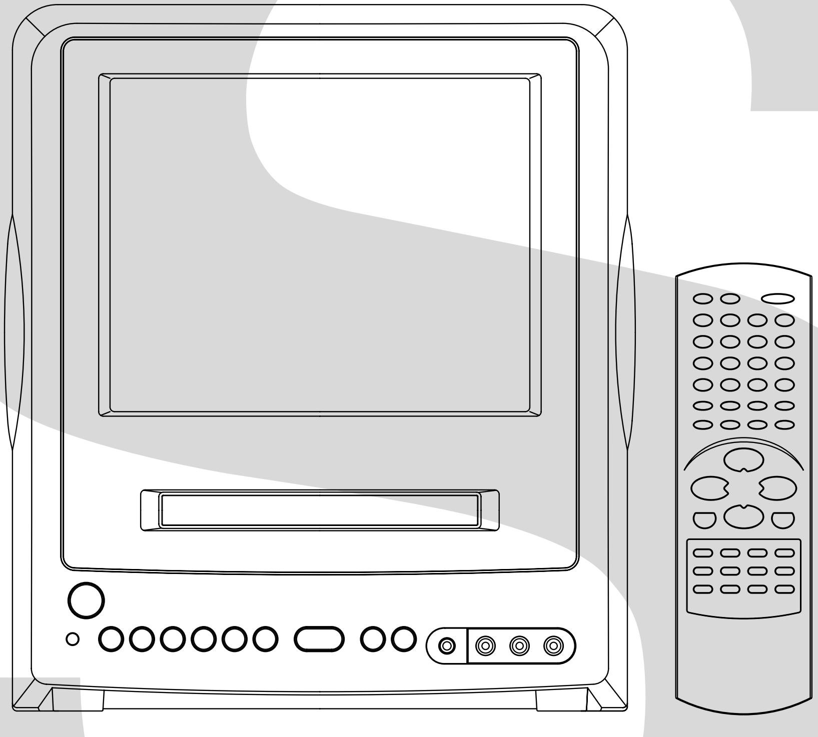
TOSHIBA

FILE NO. 140-200410

SERVICE MANUAL

COLOR TELEVISION/ DVD VIDEO PLAYER

MD9DP1



DOCUMENT CREATED IN JAPAN, Feb., 2004

CAUTION

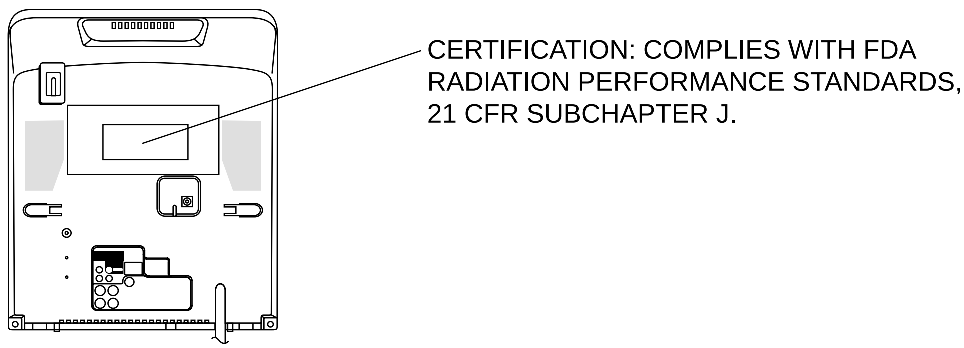
THIS DIGITAL VIDEO PLAYER EMPLOYS A LASER SYSTEM.

TO ENSURE PROPER USE OF THIS PRODUCT, PLEASE READ THIS SERVICE MANUAL CAREFULLY AND RETAIN FOR FUTURE REFERENCE. SHOULD THE UNIT REQUIRE MAINTENANCE, CONTACT AN AUTHORIZED SERVICE LOCATION-SEE SERVICE PROCEDURE.

USE OF CONTROLS, ADJUSTMENTS OR THE PERFORMANCE OF PROCEDURES OTHER THAN THOSE SPECIFIED HEREIN MAY RESULT IN HAZARDOUS RADIATION EXPOSURE.

TO PREVENT DIRECT EXPOSURE TO LASER BEAM, DO NOT TRY TO OPEN THE ENCLOSURE. VISIBLE LASER RADIATION MAY BE PRESENT WHEN THE ENCLOSURE IS OPENED. DO NOT STARE INTO BEAM.

Location of the required Marking
The rating sheet and the safety caution are on the rear of the unit.



PREPARATION OF SERVICING

The laser diode used for a pickup head may be destroyed with external static electricity.
Moreover, even if it is operating normally after repair, when static electricity discharge is received at the time of repair, a life of product may become short.
Please perform the following measure against static electricity, be careful of destruction of a laser diode enough at the time of repair, and work.

- It works on the desk which performed measures against static electricity, such as conductive mat.
- Soldering iron with ground wire or ceramic type is used.
- A worker needs to use a ground conductive wrist strap for body.

SERVICING NOTICES ON CHECKING

1. KEEP THE NOTICES

As for the places which need special attentions, they are indicated with the labels or seals on the cabinet, chassis and parts. Make sure to keep the indications and notices in the operation manual.

2. AVOID AN ELECTRIC SHOCK

There is a high voltage part inside. Avoid an electric shock while the electric current is flowing.

3. USE THE DESIGNATED PARTS

The parts in this equipment have the specific characters of incombustibility and withstand voltage for safety. Therefore, the part which is replaced should be used the part which has the same character.
Especially as to the important parts for safety which is indicated in the circuit diagram or the table of parts as a ⚠ mark, the designated parts must be used.

4. PUT PARTS AND WIRES IN THE ORIGINAL POSITION AFTER ASSEMBLING OR WIRING

There are parts which use the insulation material such as a tube or tape for safety, or which are assembled in the condition that these do not contact with the printed board. The inside wiring is designed not to get closer to the pyrogenic parts and high voltage parts. Therefore, put these parts in the original positions.

5. TAKE CARE TO DEAL WITH THE CATHODE-RAY TUBE

In the condition that an explosion-proof cathode-ray tube is set in this equipment, safety is secured against implosion. However, when removing it or serving from backward, it is dangerous to give a shock. Take enough care to deal with it.

6. AVOID AN X-RAY

Safety is secured against an X-ray by considering about the cathode-ray tube and the high voltage peripheral circuit, etc.
Therefore, when repairing the high voltage peripheral circuit, use the designated parts and make sure not modify the circuit.
Repairing except indicates causes rising of high voltage, and it emits an X-ray from the cathode-ray tube.

7. PERFORM A SAFETY CHECK AFTER SERVICING

Confirm that the screws, parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

(INSULATION CHECK PROCEDURE)

1. Unplug the plug from the AC outlet.
2. Remove the antenna terminal on TV and turn on the TV.
3. Insulation resistance between the cord plug terminals and the eternal exposure metal **[Note 2]** should be more than 1M ohm by using the 500V insulation resistance meter **[Note 1]**.
4. If the insulation resistance is less than 1M ohm, the inspection repair should be required.

[Note 1]

If you have not the 500V insulation resistance meter, use a Tester.

[Note 2]

External exposure metal: Antenna terminal
Earphone jack

HOW TO ORDER PARTS

Please include the following informations when you order parts. (Particularly the VERSION LETTER.)

1. MODEL NUMBER and VERSION LETTER
   The MODEL NUMBER can be found on the back of each product and the VERSION LETTER can be found at the end of the SERIAL NUMBER.
2. PART NO. and DESCRIPTION
   You can find it in your SERVICE MANUAL.

IMPORTANT SAFEGUARDS

1. **READ INSTRUCTIONS**
   All the safety and operating instructions should be read before the unit is operated.
2. **RETAIN INSTRUCTIONS**
   The safety and operating instructions should be retained for future reference.
3. **HEED WARNINGS**
   All warnings on the unit and in the operating instructions should be adhered to.
4. **FOLLOW INSTRUCTIONS**
   All operating and use instructions should be followed.
5. **CLEANING**
   Unplug this unit from the wall outlet before cleaning. Do not use liquid cleaners or aerosol cleaners. Use a damp cloth for cleaning.
6. **ATTACHMENTS**
   Do not use attachments not recommended by the unit's manufacturer as they may cause hazards.
7. **WATER AND MOISTURE**
   Do not use this unit near water. For example, near a bathtub, washbowl, kitchen sink, or laundry tub, in a wet basement, or near a swimming pool.
8. **ACCESSORIES**
   Do not place this unit on an unstable cart, stand, tripod, bracket, or table. The unit may fall, causing serious injury, and serious damage to the unit. Use only with a cart, stand, tripod, bracket, or table recommended by the manufacturer.

8A. An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

PORTABLE CART WARNING
(symbol provided by RETAC)



S3126A

9. **VENTILATION**
   Slots and openings in the cabinet and in the back or bottom are provided for ventilation, to ensure reliable operation of the unit, and to protect it from overheating. These openings must not be blocked or covered. The openings should never be blocked by placing the unit on a bed, sofa, rug, or other similar surface. This unit should never be placed near or over a radiator or heat source. This unit should not be placed in a built-in installation such as a bookcase or rack unless proper ventilation is provided or the manufacturer's instructions have been adhered to.
10. **POWER SOURCES**
    This unit should be operated only from the type of power source indicated on the rating plate. If you are not sure of the type of power supply to your home, consult your appliance dealer or local power company. For units intended to operate from battery power, or other sources, refer to the operating instructions.
11. **GROUNDING OR POLARIZATION**
    This unit is equipped with a polarized alternating-current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug. If your unit is equipped with a 3-wire grounding-type plug, a plug having a third (grounding) pin, this plug will only fit into a grounding-type power outlet. This too, is a safety feature. If you are unable to insert the plug into the outlet, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the grounding-type plug.
12. **POWER-CORD PROTECTION**
    Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. **LIGHTNING**
    To protect your unit from a lightning storm, or when it is left unattended and unused for long periods of time, unplug it from the wall outlet and disconnect the antenna or cable system. This will prevent damage to the unit due to lightning and power line surges.
14. **POWER LINES**
    An outside antenna system should not be located in the vicinity of overhead power lines or other electric light or power circuits, or where it can fall into such power lines or circuits. When installing an outside antenna system, extreme care should be taken to keep from touching such power lines or circuits, as contact with them might be fatal.
15. **OVERLOADING**
    Do not overload wall outlets and extension cords, as this can result in a risk of fire or electric shock.
16. **OBJECT AND LIQUID ENTRY**
    Do not push objects through any openings in this unit, as they may touch dangerous voltage points or short out parts that could result in fire or electric shock. Never spill or spray any type of liquid into the unit.
17. **OUTDOOR ANTENNA GROUNDING**
    If an outside antenna or cable system is connected to the unit, be sure the antenna or cable system is grounded so as to provide some protection against voltage surges and built-up static charges. Section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode.
18. **SERVICING**
    Do not attempt to service this unit yourself as opening or removing covers may expose you to dangerous voltage or other hazards. Refer all servicing to qualified service personnel.

19. DAMAGE REQUIRING SERVICE
Unplug this unit from the wall outlet and refer servicing to qualified service personnel under the following conditions:
a. When the power-supply cord or plug is damaged.
b. If liquid has been spilled, or objects have fallen into the unit.
c. If the unit has been exposed to rain or water.
d. If the unit does not operate normally by following the operating instructions. Adjust only those controls that are covered by the operating instructions, as an improper adjustment of other controls may result in damage and will often require extensive work by a qualified technician to restore the unit to its normal operation.
e. If the unit has been dropped or the cabinet has been damaged.
f. When the unit exhibits a distinct change in performance, this indicates a need for service.

20. REPLACEMENT PARTS
When replacement parts are required, be sure the service technician uses replacement parts specified by the manufacturer or those that have the same characteristics as the original parts.
Unauthorized substitutions may result in fire, electric shock or other hazards.

21. SAFETY CHECK
Upon completion of any service or repairs to this unit, ask the service technician to perform safety checks to determine that the unit is in proper operating condition.

22. WALL OR CEILING MOUNTING
The product should be mounted to a wall or ceiling only as recommended by the manufacturer.

23. HEAT
The product should be situated away from heat sources such as radiators, heat registers, stoves, or other products (including amplifiers) that produce heat.

24. DISC TRAY
Keep your fingers well clear of the disc tray as it is closing. It may cause serious personal injury.

25. CONNECTING
When you connect the product to other equipment, turn off the power and unplug all of the equipment from the wall outlet. Failure to do so may cause an electric shock and serious personal injury. Read the owner's manual of the other equipment carefully and follow the instructions when making any connections.

26. SOUND VOLUME
Reduce the volume to the minimum level before you turn on the product. Otherwise, sudden high volume sound may cause hearing or speaker damage.

27. SOUND DISTORTION
Do not allow the product output distorted sound for a longtime. It may cause speaker overheating and fire.

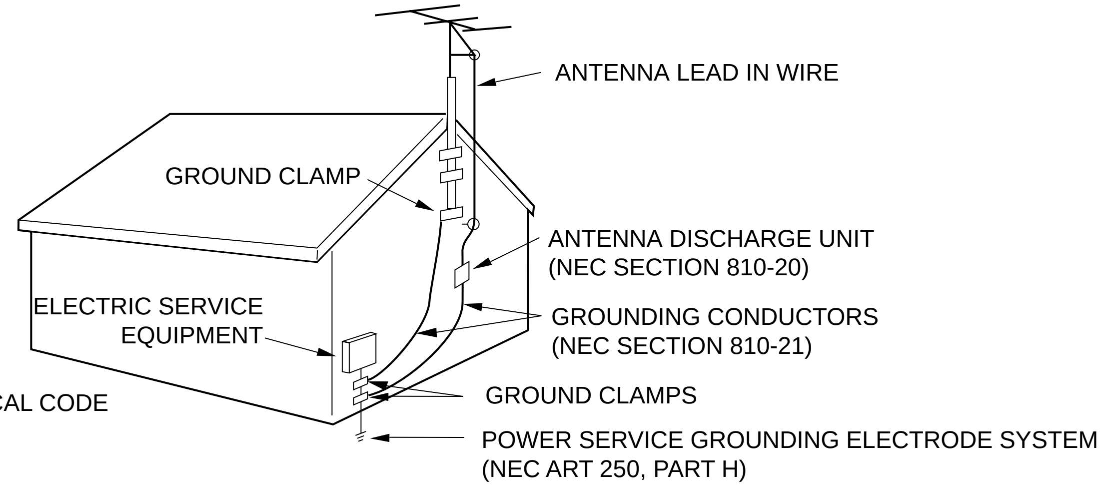
28. HEADPHONES
When you use the headphones, keep the volume at a moderate level. If you use the headphones continuously with high volume sound, it may cause hearing damage.

29. LASER BEAM
Do not look into the opening of the disc tray or ventilation opening of the product to see the source of the laser beam. It may cause sight damage.

30. DISC
Do not use a cracked, deformed, or repaired disc. These discs are easily broken and may cause serious personal injury and product malfunction.

31. NOTE TO CATV SYSTEM INSTALLER
This reminder is provided to call the CATV system installer’s attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

EXAMPLE OF ANTENNA GROUNDING AS PER THE NATIONAL ELECTRICAL CODE



NEC-NATIONAL ELECTRICAL CODE

S2898A

DISC REMOVAL METHOD AT NO POWER SUPPLY

1. Remove the Back Cabinet and AV PCB/DVD Block. **(Refer to item 1 of the DISASSEMBLY INSTRUCTIONS.)**
2. Slide the Rack Loading (White) toward the arrow direction by using a minus driver to release the lock. **(Refer to Fig. 1)**
3. Draw the Tray.

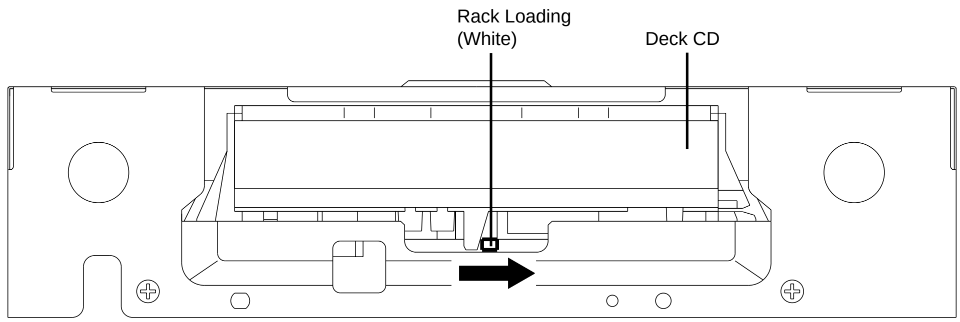


Fig. 1

PARENTAL CONTROL - RATING LEVEL

4 DIGIT PASSWORD CANCELLATION

If the stored 4 digit password in the Rating Level menu needs to be cancelled, please follow the steps below.

1. Turn Unit ON.
2. Press and hold the 'STOP' key on the front panel.
3. Simultaneously press and hold the '7' key on the remote control unit.
4. Hold both keys for more than 3 seconds.
5. The On Screen Display message 'PASSWORD CLEAR' will appear.
6. The 4 digit password has now been cleared.

TRAY LOCK

Tray cannot be opened by setting the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Press and hold the '9' key on the remote control unit.
4. Simultaneously press and hold the 'STOP' key on the front panel.
5. Hold both keys for more than 3 seconds.
6. Press the OPEN/CLOSE key on the front panel to check the Tray Lock setting.

NB: No indications on the screen when the Tray Lock is setting.

To unlock the Tray Lock, please follow the steps below.

1. Turn Unit ON.
2. Set the DVD to the Stop Mode.
3. Set the VOLUME to minimum.
4. Press and hold the 'VOL. DOWN' button on the front panel.
5. Simultaneously press and hold the '4' key on the remote control unit.
6. Hold both keys for more than 1 second.
7. The On Screen Display message 'INITALIZE5 COMPLETE' will appear.
8. The Tray Lock has now been cleared.

NB: The above procedure will reset ALL of the player's settings to the default factory state.

TABLE OF CONTENTS

GENERAL SPECIFICATIONS

G-1	**TV System**	CRT	CRT Size / Visual Size	9 inch / 228.6 mmV
			CRT Type	Normal
			Deflection	90 degree
			Magnetic Field BV/BH	+0.45G / 0.18G
		Color System		NTSC
		Speaker		2 Speaker
			Position	Side
			Size	3 inch
			Impedance	8 ohm
		Sound Output	Max	1.2W + 1.2W
			10%(Typical)	0.8W + 0.8W
G-2	**DVD System**	Color System		NTSC
		Disc		DVD, CD-DA, CD-R/RW, Video CD
		Disc Diameter		120 mm , 80 mm
		Deck	Disc Loading System	Front Loading
			Motor	2 Motors
		Pick up		1-Lens 2-Beams System
		Playback time(Max) DVD 1-L	DVD 1-Layer	135min (4.7GB)
			DVD 2-Layer	245min (8.5GB)
			CD	74min
			Video CD	74min
		Search speed	Fwd	2-20 times / 4 step
			Actual	2-45 times (DVD, VIDEO CD)
				4-40 times (CD)
			Rev	2-20 times / 4 step
			Actual	2-45 times (DVD, VIDEO CD)
				4-40 times (CD)
		Slow speed		Fwd 1/7 - 1/2 times
			Actual	--
				Rev 1/7 - 1/2 times
			Actual	--
G-3	**Tuning System**	Broadcasting System		US System M
		Tuner and Receive CH	System	1Tuner
			Destination	US(w/CATV)
			Tuning System	F-Synth
			Input Impedance	VHF/UHF 75 Ohm
			CH Coverage	2~69, 4A, A-5~A-1, A~I, J~W, W+1~W+84
		Intermediate Frequency	Picture(FP)	45.75MHz
			Sound(FS)	41.25MHz
			FP-FS	4.50MHz
		Preset CH		No
		Stereo/Dual TV Sound		US-Stereo
		Tuner Sound Muting		Yes
G-4	**Signal**	Video Signal	Input Level	1 V p-p/75 ohm
			Output Level	1 V p-p/75 ohm
			S/N Ratio (Weighted)	65dB
			Horizontal Resolution at DVD Mode	400 Lines (TV Monitor) 500 Lines (Video Out)
		RGB Signal	Output Level	--
		Audio Signal	Input Level	-8.0dBm/50k ohm
			Output Level	-8 dBm/ 1k ohm (TV Mode, 0dB=0.775Vrms) -12dBm/ 1k ohm (DVD Mode, -20dBFs 0dBFs=2.0Vrms)
			Digital Output Level	0.5 V p-p/75 ohm
			S/N Ratio at DVD (Weighted)	90 dB
			Harmonic Distortion	0.06% (1kHz)
			Frequency Response : at DVD	4Hz - 22kHz
			at Video CD	4Hz - 20kHz
			at SVCD	--
			at CD	4Hz - 20kHz
G-5	**Power**	Power Source	AC	120V, 60Hz
			DC	12 V
		Power Consumption	at AC	55W at 120V 60Hz
			at DC	55W at 12V
			Stand by (at AC)	5 W at 120V 60Hz
			Per Year	-- kWh/Year
		Protector	Power Fuse	Yes
G-6	**Regulation**		Safety	UL
			Radiation	FCC
			X-Radiation	DHHS
			Laser	DHHS

GENERAL SPECIFICATIONS

G-7	**Temperature**			Operation	+5oC ~ +40oC
				Storage	-20oC ~ +60oC
G-8	**Operating Humidity**				Less than 80% RH
G-9	**On Screen Display**	Menu(TV)			Yes
			Menu Type		Icon
			TV Setup		Yes
				Picture	Yes
				Audio	No
				Picture Preference	Yes
			Channel Setup		Yes
				TV/CATV	Yes
				Auto CH Memory	Yes
				Add/ Delete	Yes
			V-chip Setup		Yes
			Language		Yes
		Sleep Timer			Yes
		CH / AV(LINE) / DVD			Yes
		Stereo/Audio Output			Yes
				Bilingual	No
				SAP	Yes
		Control Level	Volume		Yes
			Bright / Contrast / Sharpness / Color		Yes
			Tint		Yes
			Bass/Treble/Balance		No
		Caption / Text			Yes
		Auto Search/Position			No
		Game			Yes
		Mute			Yes

GENERAL SPECIFICATIONS

No.	Item				Specification
G-10	**On Screen Display**	Menu (DVD)			Yes
			Menu Type		Character
			Language		Yes
				Menu	Yes
				Subtitle	Yes
				Audio	Yes
			Picture		Yes
				TV Screen Size	Yes
				OSD Display On/Off	Yes
				JPEG Interval	Yes
				Select Files	No
			Sound		Yes
				DRC (Dynamic Range Control)	Yes
				dts Decode	No
				Output(5.1ch/ 2ch)	No
				Surround On/Off	No
				Center On/Off	No
				Sub Woofer On/Off	No
			Parental		Yes
				Password Lock/ Un Lock	Yes
				Rating Level	Yes
			Other		Yes
				OSD Language(Set up Language)	Yes
				Output(RGB/Composite)	No
			Open		Yes
			Close		Yes
			No disc		Yes
			Reading		Yes
			Play		Yes
			Still/Pause		Yes
			Stop		Yes
			Prohibit Mark		Yes
			Step		Yes
			Skip(>>|)		Yes
			Skip(|<<)		Yes
			Random		Yes (CD, VIDEO CD, JPEG)
			Repeat		Yes
			Slow+ ##		Yes
			Slow- ##		Yes
			Search+ ##		Yes
			Search- ##		Yes
			Jump		Yes
			Resume		Yes
			Title No.		Yes
			Chapter No.		Yes
			Track No.		Yes
			Time		Yes
			Sub Title No.		Yes
			Angle No.		Yes
			Vocal On/Off		Yes
			Audio No.		Yes
			Audio Stereo L/R		Yes (Video CD)
			Zoom		Yes
			Marker No.		No
			Program Play Back		Yes (CD, VIDEO CD, JPEG)
			Surround On/Off		No
			Screen Saver		No
			JPEG	Folder Name	Yes
				File Name	Yes
				File No	Yes
				Time	No
				Track No	Yes
G-11	**OSD Language**	(TV)			English, French, Spanish
		(DVD)			English, French, Spanish
G-12	**Clock and Timer**	Sleep Timer		Max Time	120 Min
				Step	10 Min
		On/Off Timer		Program(On Timer / Off Timer)	No
		Wake Up Timer			No
		Timer Back-up (at Power Off Mode)		more than	-- Min Sec

GENERAL SPECIFICATIONS

G-13	**Remote Control**	Unit		RC-GD
		Glow in Dark Remocon		Yes
		Format		NEC
		Custom Code		71-8E h
		Power Source	Voltage(D.C)	3V
			UM size x pcs	UM-4 x 2 pcs
		Total Keys		45 Key
		Keys	Power	Yes
			1	Yes
			2	Yes
			3	Yes
			4	Yes
			5	Yes
			6	Yes
			7	Yes
			8	Yes
			9	Yes
			0	Yes
			Play	Yes
			Stop	Yes
			Search+	Yes
			Search-	Yes
			Skip+	Yes
			Skip-	Yes
			Slow+	Yes
			Slow-	Yes
			Pause	Yes
			Call	Yes
			TV/DVD	Yes
			Cancel	Yes
			Audio Select	Yes
			Angle	Yes
			Subtitle	Yes
			Top Menu	Yes
			Set up/ Menu	Yes
			DVD Menu	Yes
			Return	Yes
			Up/ Set+/ CH Up	Yes
			Down/ Set-/ CH Down	Yes
			Left/Select-/Vol Down	Yes
			Right/Select+/Vol Up	Yes
			Select/ Enter	Yes
			Play Mode	Yes
			Closed Caption	Yes
			Input Select	Yes
			Repeat A-B	Yes
			Zoom/ Quick View	Yes
			Mute	Yes
			Open/Close	Yes
			Sleep	Yes
			Jump	Yes
			Game	Yes

GENERAL SPECIFICATIONS

				Yes	No
G-14	Features	CATV		Yes	
		Auto Shut Off		Yes	
		Auto CH Memory		Yes	
		V-Chip	USA V-chip	Yes	
			CANADA V-chip		No
		Auto Search			No
		SAP		Yes	
		Game Position		Yes	
		FM Transmitter			No
		Energy Star		Yes	
		Closed Caption		Yes	
		Comb Filter			No
		Protect of FBT Leak Circuit		Yes	
		Choke Coil			No
		Power On Memory			No
		Tray Lock		Yes	
		Parental Lock (DVD Only)		Yes	
		Video CD Playback		Yes	
		SVCD Playback			No
			Overlay Graphics And Text		No
			Command List		No
			Entry Point Jump		No
		MP3 Playback			No
		WMA Playback			No
		JPEG Playback		Yes	
		Digital Out	(Dolby Digital)	Yes	
			(MPEG)	Yes	
			(PCM)	Yes	
			(DTS)	Yes	
		Down Mix Out	(Dolby Digital)	Yes	
			(DTS)		No
		Surround (Tru Surround)			No
		Screen Saver			No
		Picture Preference		Yes	
		Auto Setup		Yes	
		Audio DAC		192kHz / 24bit	
G-15	Accessories	Owner's Manual	Language	English	
			w/Guarantee Card	Yes	
			Buyer Model No.	MD9DP1	
		Remote Control Unit		Yes	
		Battery		Yes	
			UM size x pcs	UM-4 x 2 pcs	
			OEM Brand		No
		Rod Antenna			No
			Poles		No
			Terminal		--
		Loop Antenna			No
			Terminal		--
		U/V Mixer			No
		300 ohm to 75 ohm Antenna Adapter		Yes	
		Antenna Change Plug			No
		Guarantee Card			No
		Registration Card		Yes	
		Warranty Card			No
		ESP Card			No
		Service Station List			No
		DC Car Cord (Center+)		Yes	
		Columbia Offer Sheet			No
		Sheet Information (Return)		Yes	

GENERAL SPECIFICATIONS

No.	Item				Specification
G-16	**Interface**	Switch	Front	Power (Tact)	Yes
				Channel Up	Yes
				Channel Down	Yes
				Volume Up	Yes
				Volume Down	Yes
				Play	Yes
				Open/Close	Yes
				Skip(>>|)	Yes
				Skip(|<<)	Yes
				Still/Pause	No
				Stop	Yes
				Main Power SW	No
			Rear	Main Power SW	No
		Indicator		Power	Yes (Red)
				Stand-by	No
				On Timer	No
		Terminals	Front	Video Input	RCA x 1
				Audio Input	RCA x 2(Stereo)
				Other Terminal	Head Phone
			Rear	Video Input	No
				Audio Input	No
				Video Output	RCA x 1
				Audio Output	RCA x 2(Stereo)
				Digital Audio Output	Coaxial (DVD Only)
				Diversity	No
				DC Jack 12V(Center +)	Yes
				VHF/UHF Antenna Input	F Type
G-17	**Set Size**			Approx. W x D x H (mm)	278x306x311.5
G-18	**Weight**			Net (Approx.)	8.0 kg (17.6lbs)
				Gross (Approx.)	9.1 kg (20.1lbs)
G-19	**Carton**		Master Carton		No
				Content	--- Sets
				Material	--- / ---
				Dimensions W x D x H(mm)	---
				Description of Origin	---
			Gift Box		Yes
				Material	Double/White
				W/Color Photo Label	No
				Dimensions W x D x H(mm)	338x381x386
				Design	As Per Buyer 's
				Description of Origin	Yes
				Buyer Model No.	MD9DP1
			Drop Test	Natural Dropping At	1 Corner / 3 Edges / 6 Surfaces
				Height (cm)	62
			Container Stuffing (40' container)		1260 Sets
G-20	**Material**		Cabinet	Front	PS 94V0 DECABROM
				Rear	PS 94V0 DECABROM
				Jack Panel	-
			PCB	Non-Halogen Demand	No
				Eyelet Demand	Yes
G-21	**Environment**		Pb Free	Lead-free Solder	No
				Other	No
			Cd Free		No

DISASSEMBLY INSTRUCTIONS

1. REMOVAL OF MECHANICAL PARTS AND P.C. BOARDS

1-1: BACK CABINET (Refer to Fig. 1-1)

1. Remove the 5 screws ①.
2. Remove the 2 screws ②.
3. Remove the screw ③.
4. Remove the Back Cabinet in the direction of arrow.

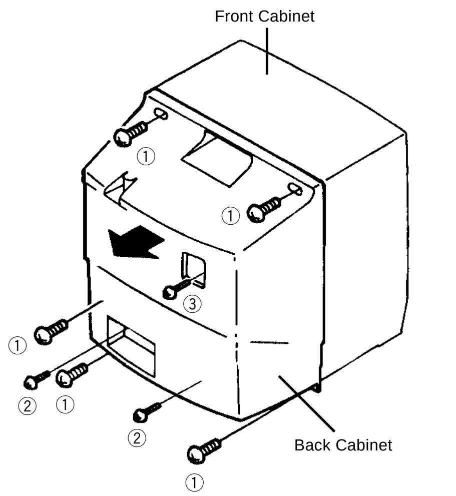


Fig. 1-1

1-2: CRT PCB (Refer to Fig. 1-2)

**CAUTION: BEFORE REMOVING THE ANODE CAP, DISCHARGE ELECTRICITY BECAUSE IT CONTAINS HIGH VOLTAGE.
BEFORE ATTEMPTING TO REMOVE OR REPAIR ANY PCB, UNPLUG THE POWER CORD FROM THE AC SOURCE.**

1. Remove the Anode Cap.
   (Refer to REMOVAL OF ANODE CAP)
2. Disconnect the following connector:
   (CP801).
3. Remove the CRT PCB in the direction of arrow.

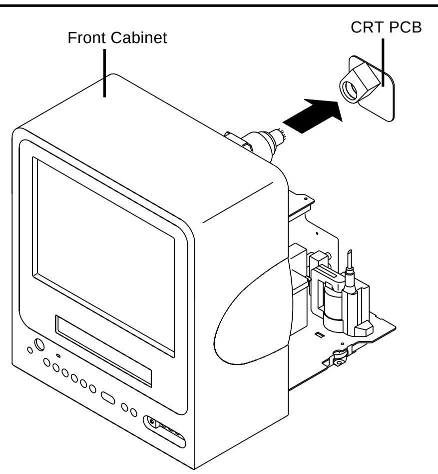


Fig. 1-2

1-3: TV/DVD BLOCK (Refer to Fig. 1-3)

1. Remove the 2 screws ①.
2. Disconnect the following connectors:
   (CP301, CP302, CP401 and CP403).
3. Remove the TV/DVD Block in the direction of arrow.

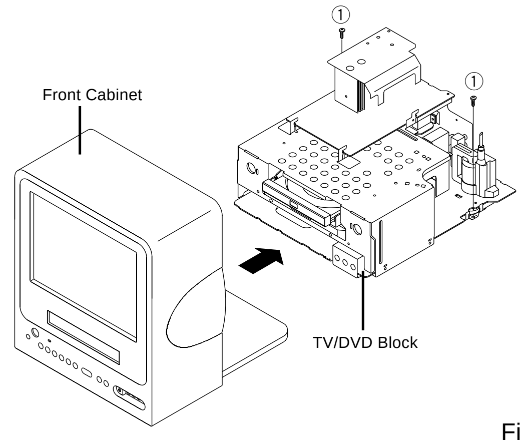


Fig. 1-3

1-4: POWER PCB (Refer to Fig. 1-4)

1. Remove the screw ①.
2. Remove the Main PCB Holder.
3. Remove the 2 screws ②.
4. Disconnect the following connectors:
   (CP3802 and CP3803).
5. Remove the Power PCB in the direction of arrow.

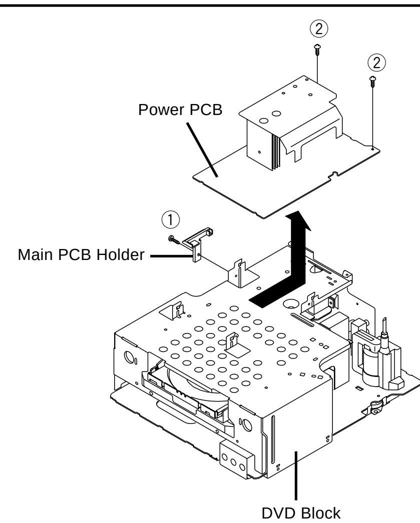


Fig. 1-4

DISASSEMBLY INSTRUCTIONS

**1-5: FRONT TRAY PLATE/TOP SHIELD
(Refer to Fig. 1-5)**

1. Unlock the 2 supports ①.
2. Remove the Front Tray Plate in the direction of arrow (A).
3. Remove the 12 screws ②.
4. Remove the Top Shield in the direction of arrow (B).

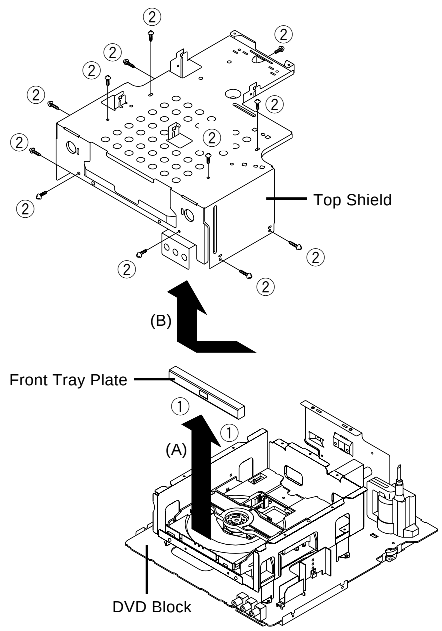


Fig. 1-5

1-6: DVD PCB/DVD DECK (Refer to Fig. 1-6)

1. Make the short circuit on the position as shown **Fig. 1-6** using a soldering. If you remove the DVD Deck with no soldering, the Laser may be damaged.
2. Disconnect the following connectors: (CP8001 and CP8002).
3. Remove the 4 screws ①.
4. Remove the Angle Deck in the direction of arrow (A).
5. Disconnect the following connectors: (CP2601, CP2602 and CP2603).
6. Remove the 4 screws ②.
7. Remove the DVD Deck in the direction of arrow (B).
8. Remove the 4 screws ③.
9. Remove the DVD PCB in the direction of arrow (C).

NOTE

When the installation of the DVD Deck, remove all the soldering on the short circuit position after the connection of Pick Up PCB and DVD PCB connector.

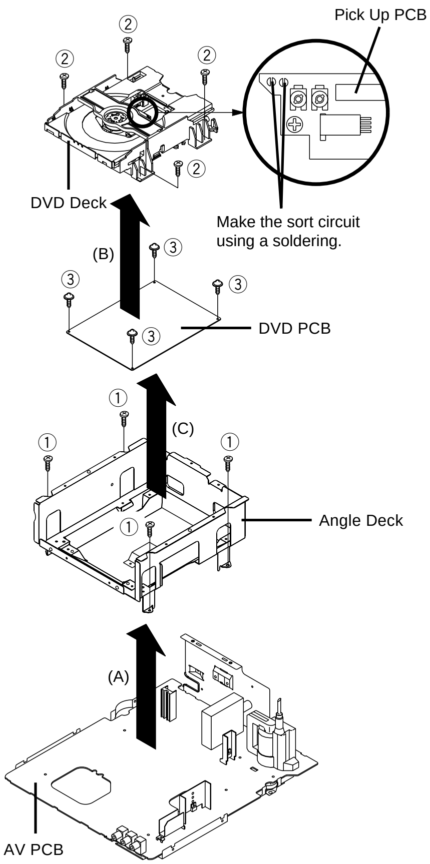


Fig. 1-6

1-7: AV PCB (Refer to Fig. 1-7)

1. Remove the screw ①.
2. Remove the screw ①.
3. Remove the AV Jack Shield.
4. Remove the AV PCB in the direction of arrow.

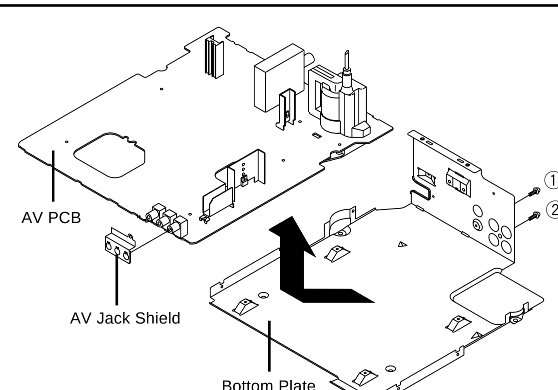


Fig. 1-7

DISASSEMBLY INSTRUCTIONS

2. REMOVAL OF DVD DECK PARTS

NOTE

1. Do not disassemble the DVD DECK PARTS except listed parts here. Minute adjustments are needed if the disassemble is done. If the repair is needed except listed parts, replace the DVD MECHA ASS'Y.

2-1: TRAY (Refer to Fig. 2-1-A)

1. Set the Tray opened. **(Refer to the DISC REMOVAL METHOD AT NO POWER SUPPLY)**
2. Unlock the support ① and remove the Tray.

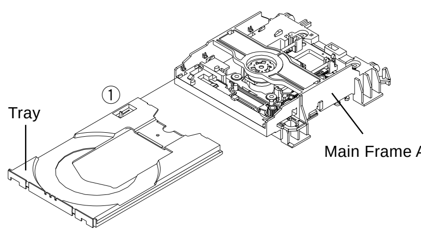


Fig. 2-1-A

NOTE

1. In case of the Tray installation, install them as the circled section of Fig. 2-1-B so that the each markers are met.

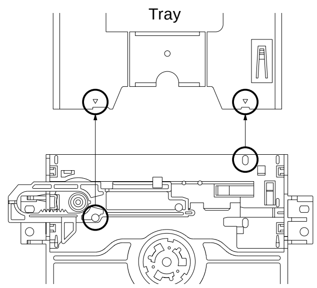


Fig. 2-1-B

2-2: MAIN CHASSIS ASS'Y (Refer to Fig. 2-2-A)

1. Remove the Main Chassis Ass'y from the Insulator (R).
2. Unlock the support ①.
3. Remove the Main Chassis Ass'y.

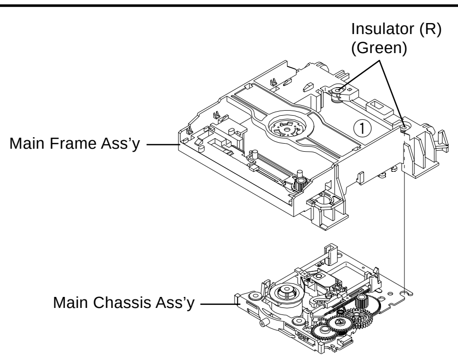


Fig. 2-2-A

NOTE

1. In case of the Main Chassis Ass'y, install it from (1) to (6) in order. **(Refer to Fig. 2-2-B)**

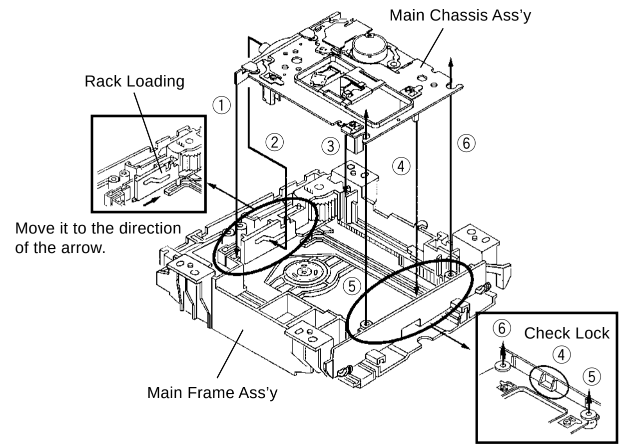


Fig. 2-2-B

2-3: RACK LOADING/MAIN GEAR/ RACK LOADING SPRING/ RACK L SPRING (Refer to Fig. 2-3)

1. Remove the Rack L Spring.
2. Press down the catcher ① and slide the Rack Loading.
3. Remove the Rack Loading, Rack Loading Spring and Main Gear.

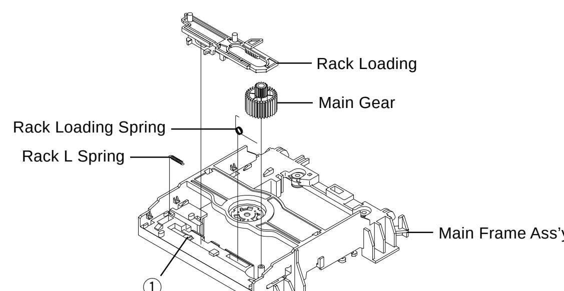


Fig. 2-3

2-4: CLAMPER ASS'Y/INSULATOR(R)/LEVER SWITCH (Refer to Fig. 2-4-A)

1. Remove the screw ①.
2. Remove the Lever Switch.
3. Remove the 2 Insulator (R).
4. Press the Clamper and rotate the Clamper Plate clockwise, then unlock the 3 supports ②.
5. Remove the Clamper Plate, Clamper Magnet and Clamper.

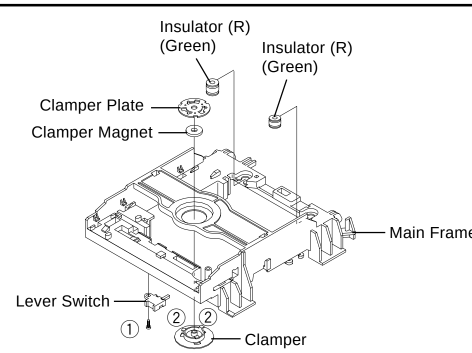


Fig. 2-4-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. When installing the Clamper Magnet, install it with the green face up.
2. When installing the wire of the Lever Switch, install it correctly as Fig. 2-4-B.
3. When installing the Lever Switch, install it correctly as Fig. 2-4-C.
4. In case of the Lever Switch installation, hook the wire on the Main Frame as shown Fig. 2-4-D.

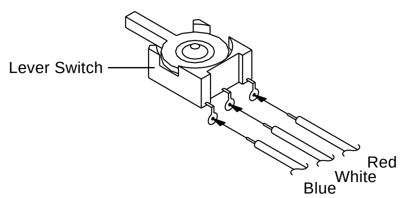


Fig. 2-4-B

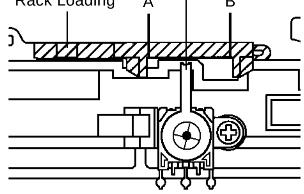


Fig. 2-4-C

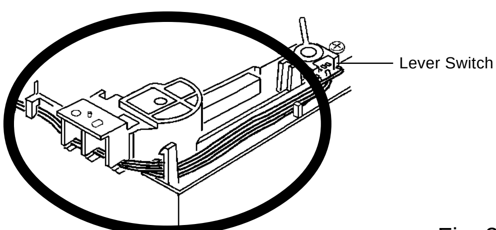


Fig. 2-4-D

2-5: TRAVERSE HOLDER/INSULATOR (F) (Refer to Fig. 2-5-A)

1. Remove the Traverse Holder.
2. Remove the 2 Insulator (F).

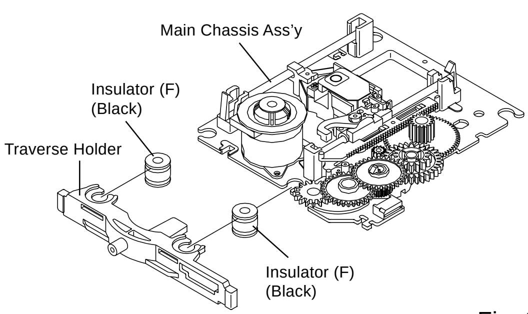


Fig. 2-5-A

NOTE

1. After the installing of the Traverse Holder, check if the wire is like Fig. 2-5-B.

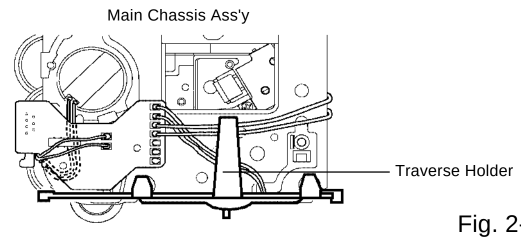
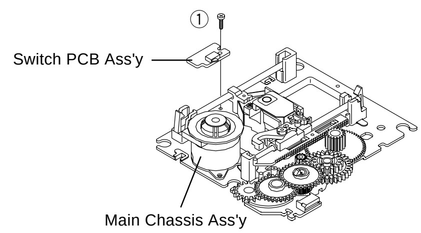


Fig. 2-5-B

2-6: SWITCH PCB ASS'Y (Refer to Fig. 2-6-A)

1. Remove the screw ①.
2. Remove the Switch PCB Ass'y.



• Screw Torque: 4 ± 0.5kgf•cm

Fig. 2-6-A

NOTE

1. When installing the wire of the Switch PCB, install it correctly as Fig. 2-6-B.

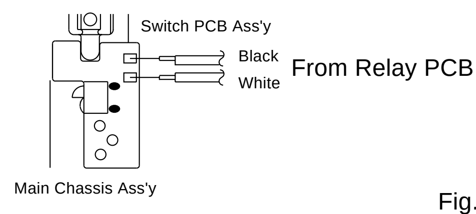
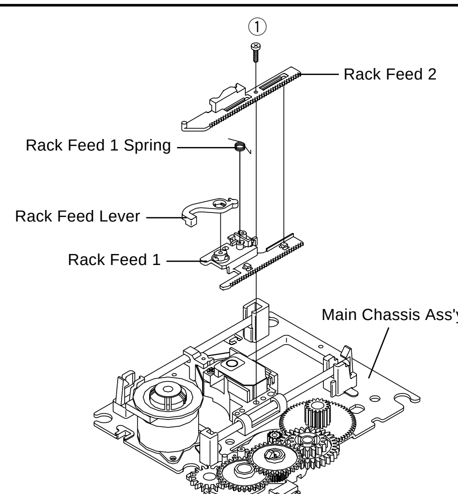


Fig. 2-6-B

2-7: RACK FEED ASS'Y (Refer to Fig. 2-7-A)

1. Remove the screw ①.
2. Remove the Rack Feed 1 Spring, Rack Feed 1/2 and Rack Feed Lever.



• Screw Torque: 3.5 ± 0.5kgf•cm

Fig. 2-7-A

DISASSEMBLY INSTRUCTIONS

NOTE

1. After the assembly of the Rack Feed, check if the Rack Feed 1/2 is moving smoothly. **(Refer to Fig. 2-7-B)**
2. In case of the Rack Feed Ass'y installation, install correctly as Fig. 2-7-C.

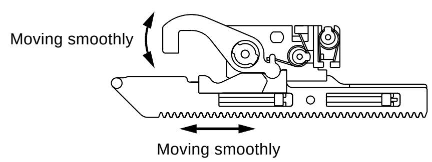


Fig. 2-7-B

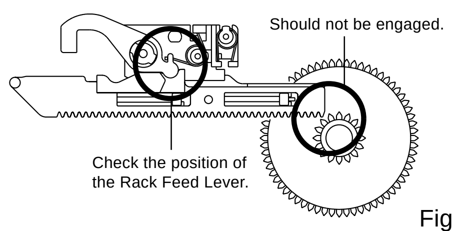


Fig. 2-7-C

2-8: RELAY PCB ASS'Y (Refer to Fig. 2-8-A)

1. Remove the screw ①.
2. Remove the Relay PCB Ass'y.

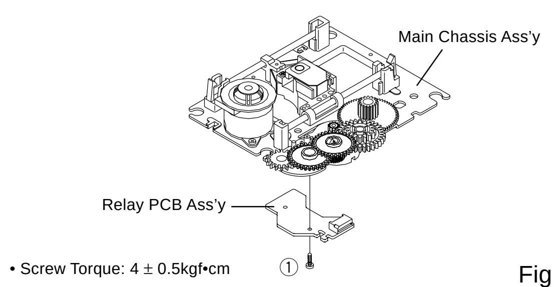


Fig. 2-8-A

NOTE

1. When installing the wire of the Relay PCB, install it correctly as Fig. 2-8-B.

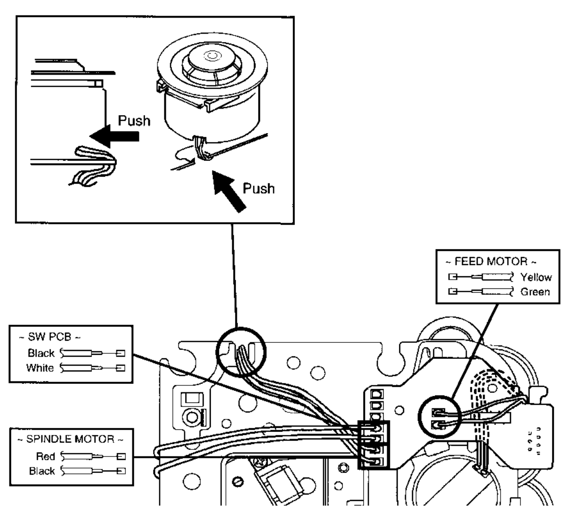


Fig. 2-8-B

2-9: GEAR (Refer to Fig. 2-9-A)

1. Unlock the support ①.
2. Remove the Middle Gear 1/2/3, Idler Gear and Feed Gear.

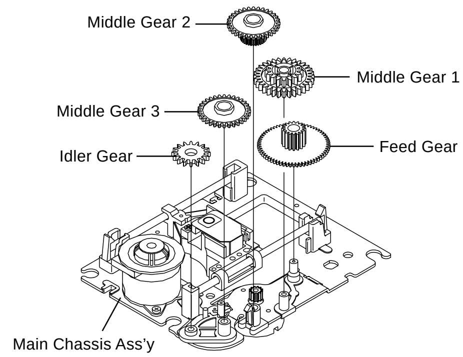


Fig. 2-9-A

NOTE

1. In case of the Idler Gear installation, install correctly as Fig. 2-9-B.
2. When installing the Middle Gear 2, check if the Middle Gear 2 is locked correctly as Fig. 2-9-C.

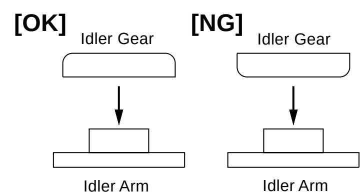


Fig. 2-9-B

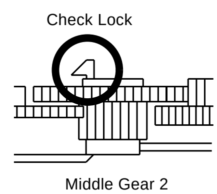


Fig. 2-9-C

2-10: IDLER ARM (Refer to Fig. 2-10)

1. Remove the Idler Arm.

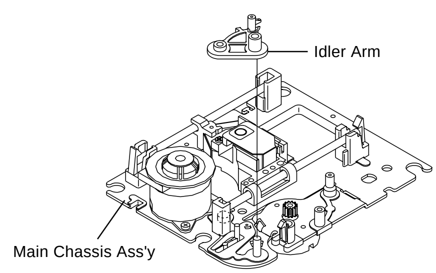
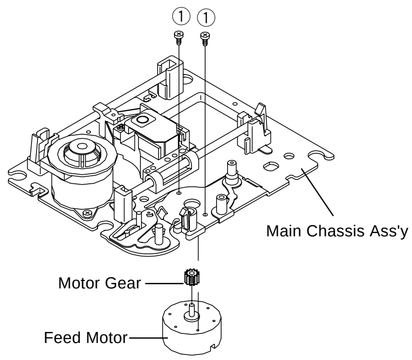


Fig. 2-10

DISASSEMBLY INSTRUCTIONS

2-11: FEED MOTOR (Refer to Fig. 2-11-A)

1. Remove the 2 screws ①.
2. Remove the Feed Motor.
3. Remove the Motor Gear.



• Screw Torque: 1 ± 0.5kgf•cm

Fig. 2-11-A

NOTE

1. In case of the Motor Gear installation, check if the value of the Fig. 2-11-B is correct.
2. When installing the Feed Motor, check if the cable is positioned as Fig. 2-11-C.

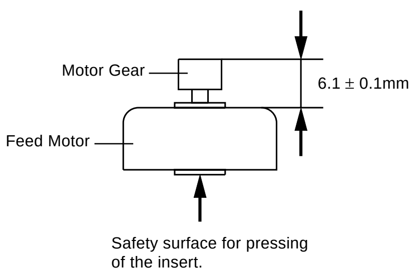


Fig. 2-11-B

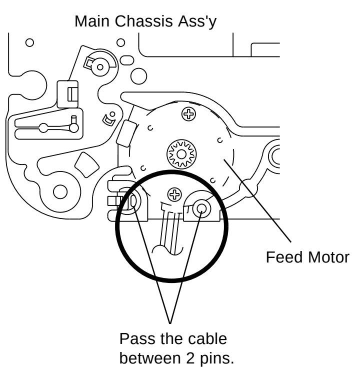


Fig. 2-11-C

DISASSEMBLY INSTRUCTIONS

3. REMOVAL OF ANODE CAP

Read the following **NOTED** items before starting work.

* After turning the power off there might still be a potential voltage that is very dangerous. When removing the Anode Cap, make sure to discharge the Anode Cap's potential voltage.
* Do not use pliers to loosen or tighten the Anode Cap terminal, this may cause the spring to be damaged.

REMOVAL

1. Follow the steps as follows to discharge the Anode Cap. **(Refer to Fig. 3-1.)**
   Connect one end of an Alligator Clip to the metal part of a flat-blade screwdriver and the other end to ground.
   While holding the plastic part of the insulated Screwdriver, touch the support of the Anode with the tip of the Screwdriver.
   A cracking noise will be heard as the voltage is discharged.

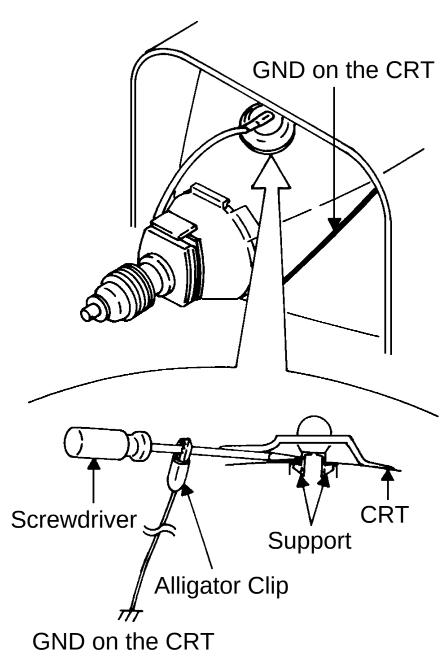


Fig. 3-1

2. Flip up the sides of the Rubber Cap in the direction of the arrow and remove one side of the support.
   (Refer to Fig. 3-2.)

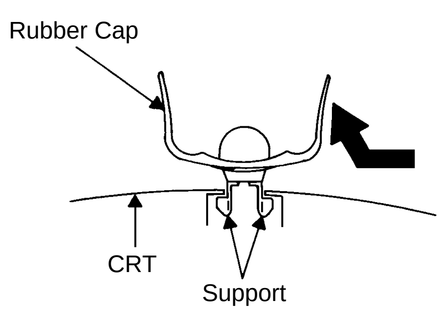


Fig. 3-2

3. After one side is removed, pull in the opposite direction to remove the other.

NOTE

Take care not to damage the Rubber Cap.

INSTALLATION

1. Clean the spot where the cap was located with a small amount of alcohol. **(Refer to Fig. 3-3.)**

NOTE

Confirm that there is no dirt, dust, etc. at the spot where the cap was located.

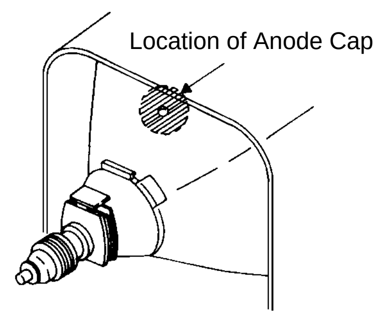
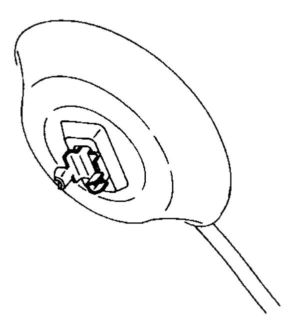


Fig. 3-3

2. Arrange the wire of the Anode Cap and make sure the wire is not twisted.
3. Turn over the Rubber Cap. **(Refer to Fig. 3-4.)**


Fig. 3-4

4. Insert one end of the Anode Support into the anode button, then the other as shown in **Fig. 3-5**.

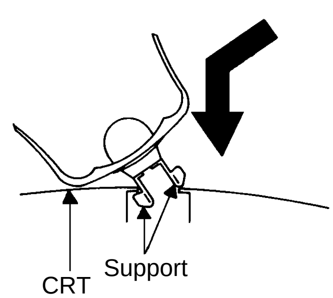


Fig. 3-5

5. Confirm that the Support is securely connected.
6. Put on the Rubber Cap without moving any parts.

DISASSEMBLY INSTRUCTIONS

4. REMOVAL AND INSTALLATION OF FLAT PACKAGE IC

REMOVAL

1. Put the Masking Tape (cotton tape) around the Flat Package IC to protect other parts from any damage. **(Refer to Fig. 4-1.)**

   NOTE

   Masking is carried out on all the parts located within 10 mm distance from IC leads.

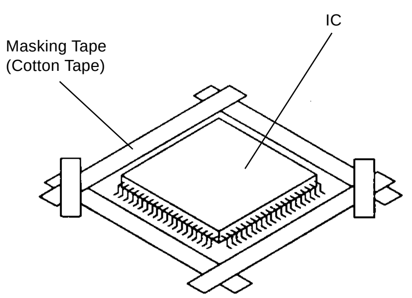


Fig. 4-1

2. Heat the IC leads using a blower type IC desoldering machine. **(Refer to Fig. 4-2.)**

   NOTE

   Do not add the rotating and the back and forth directions force on the IC, until IC can move back and forth easily after desoldering the IC leads completely.

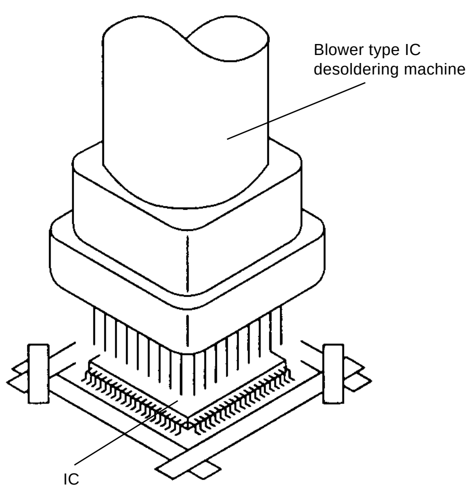


Fig. 4-2

3. When IC starts moving back and forth easily after desoldering completely, pickup the corner of the IC using a tweezers and remove the IC by moving with the IC desoldering machine. **(Refer to Fig. 4-3.)**

   NOTE

   Some ICs on the PCB are affixed with glue, so be careful not to break or damage the foil of each IC leads or solder lands under the IC when removing it.

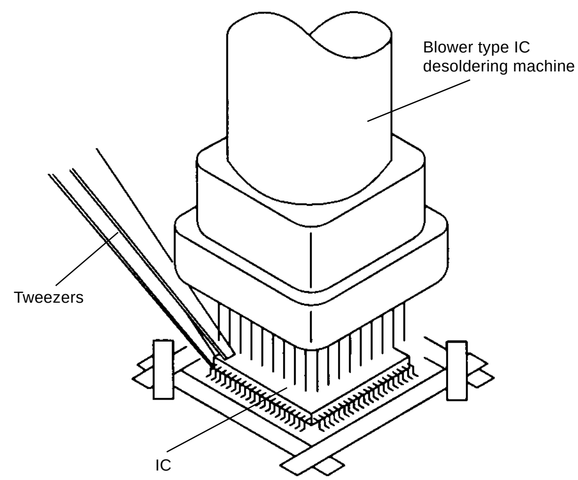


Fig. 4-3

4. Peel off the Masking Tape.
5. Absorb the solder left on the pattern using the Braided Shield Wire. **(Refer to Fig. 4-4.)**

   NOTE

   Do not move the Braided Shield Wire in the vertical direction towards the IC pattern.

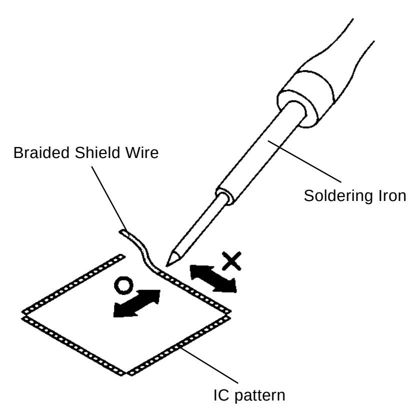


Fig. 4-4

DISASSEMBLY INSTRUCTIONS

INSTALLATION

1. Take care of the polarity of new IC and then install the new IC fitting on the printed circuit pattern. Then solder each lead on the diagonal positions of IC temporarily. **(Refer to Fig. 4-5.)**

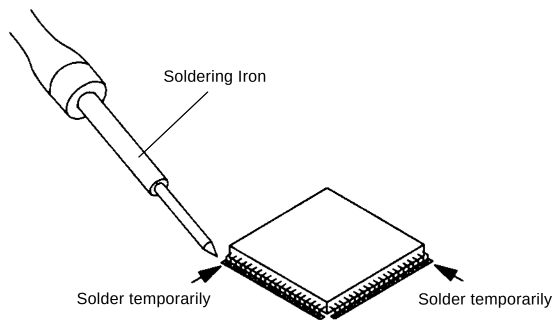


Fig. 4-5

2. Supply the solder from the upper position of IC leads sliding to the lower position of the IC leads. **(Refer to Fig. 4-6.)**

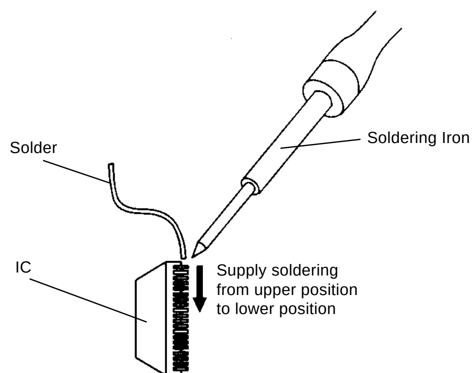


Fig. 4-6

3. Absorb the solder left on the lead using the Braided Shield Wire. **(Refer to Fig. 4-7.)**

   NOTE

   Do not absorb the solder to excess.

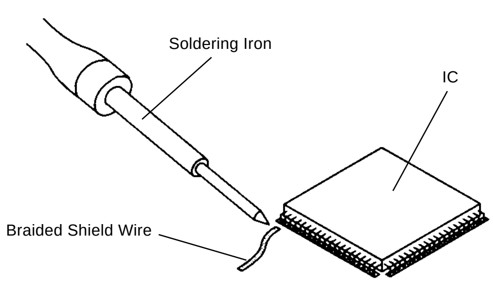


Fig. 4-7

4. When bridge-soldering between terminals and/or the soldering amount are not enough, resolder using a Thin-tip Soldering Iron. **(Refer to Fig. 4-8.)**

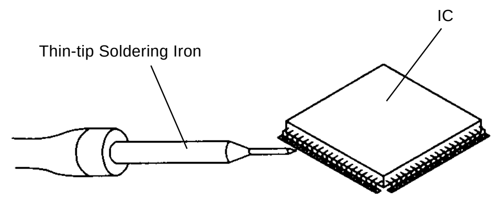


Fig. 4-8

5. Finally, confirm the soldering status on four sides of the IC using a magnifying glass.
   Confirm that no abnormality is found on the soldering position and installation position of the parts around the IC. If some abnormality is found, correct by resoldering.

   NOTE

   When the IC leads are bent during soldering and/or repairing, do not repair the bending of leads. If the bending of leads are repaired, the pattern may be damaged. So, always be sure to replace the IC in this case.

SERVICE MODE LIST

This unit provided with the following SERVICE MODES so you can repair, examine and adjust easily.

To enter to the SERVICE MODE function, press and hold both buttons simultaneously on the main unit and on the remote control for more than a standard time (second).

Set Key	Remocon Key	Standard Time (seconds)	Operations
VOL. (-) MIN	0	1	Releasing of V-CHIP PASSWORD.
VOL. (-) MIN	1	1	Initialization of the factory on TV. NOTE: Do not use this for the normal servicing. If you set a factory initialization, the memories are reset such as the channel setting, and the POWER ON total hours.
VOL. (-) MIN	4	1	Initialization of the factory on DVD. NOTE: Do not use this for the normal servicing. The function will only work at the DVD stop mode.
VOL. (-) MIN	6	1	POWER ON total hours are displayed on the screen. Refer to the "PREVENTIVE CHECKS AND SERVICE INTERVALS" (CONFIRMATION OF HOURS USED). Can be checked of the INITIAL DATA of MEMORY IC. Refer to the "WHEN REPLACING EEPROM (MEMORY) IC".
VOL. (-) MIN	9	1	Display of the Adjustment MENU on the screen. Refer to the "ELECTRICAL ADJUSTMENT" (On-Screen Display Adjustment).
STOP	7	3	Releasing of PARENTAL LOCK. Refer to the “PARENTAL CONTROL - RATING LEVEL”. NOTE: The function will only work without the setting of DVD disc at DVD mode.
STOP	9	3	Tray cannot be opened. Refer to the “TRAY LOCK”. NOTE: No indications on the screen when the Tray Lock is setting.

CONFIRMATION OF HOURS USED

POWER ON total hours can be checked on the screen. Total hours are displayed in 16 system of notation.

NOTE: If you set a factory initialization, the total hours is reset to "0".

1. Set the VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
3. After the confirmation of using hours, turn off the power.

ADDRESS DATA

INIT 00 06 — Initial setting content of MEMORY IC.
CRT ON 0010 — POWER ON total hours.
= (16 x 16 x 16 x thousands digit value)
+ (16 x 16 x hundreds digit value)
+ (16 x tens digit value)
+ (ones digit value)

FIG. 1

WHEN REPLACING EEPROM (MEMORY) IC

If a service repair is undertaken where it has been required to change the MEMORY IC, the following steps should be taken to ensure correct data settings while making reference to TABLE 1.

NOTE: No need setting for after INI 27 due to the adjustment value.

INI	+0	+1	+2	+3	+4	+5	+6	+7	+8	+9	+A	+B	+C	+D	+E	+F
00	06	0F	44	40	D0	45	30	25	05	55	03	00	C8	50	0F	47
10	30	60	70	05	05	88	23	60	00	78	56	FF	05	11	FF	FF
20	00	03	05	07	09	0B	0D	0F	---	---	---	---	---	---	---	---

Table 1

1. Enter DATA SET mode by setting VOLUME to minimum.
2. Press both VOL. DOWN button on the set and Channel button **(6)** on the remote control for more than 1 second.
   ADDRESS and DATA should appear as FIG 1.

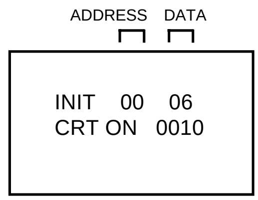


FIG. 1

3. ADDRESS is now selected and should "blink". Using the VOL. UP/DOWN button on the remote, step through the ADDRESS until required ADDRESS to be changed is reached.
4. Press ENTER to select DATA. When DATA is selected, it will "blink".
5. Again, step through the DATA using VOL. UP/DOWN button until required DATA value has been selected.
6. Pressing ENTER will take you back to ADDRESS for further selection if necessary.
7. Repeat steps 3 to 6 until all data has been checked.
8. When satisfied correct DATA has been entered, turn POWER off (return to STANDBY MODE) to finish DATA input.
   After the data input, set to the initializing of shipping.
9. Turn POWER on.
10. Press both VOL. DOWN button on the set and Channel button **(1)** on the remote control for more than 1 second.
11. After the finishing of the initializing of shipping, the unit will turn off automatically.

The unit will now have the correct DATA for the new MEMORY IC.

ELECTRICAL ADJUSTMENTS

1. BEFORE MAKING ELECTRICAL ADJUSTMENTS

Read and perform these adjustments when repairing the circuits or replacing electrical parts or PCB assemblies.

CAUTION

- Use an isolation transformer when performing any service on this chassis.
- Before removing the anode cap, discharge electricity because it contains high voltage.
- When removing a PCB or related component, after unfastening or changing a wire, be sure to put the wire back in its original position.
- When you exchange IC and Transistor for a heat sink, apply the silicon grease on the contact section of the heat sink. Before applying new silicon grease, remove all the old silicon grease. (Old grease may cause damages to the IC and Transistor).

Prepare the following measurement tools for electrical adjustments.

1. Oscilloscope
2. Digital Voltmeter
3. AC Voltmeter
4. Pattern Generator
5. Multi-Sound Signal Generator

On-Screen Display Adjustment

1. Set the VOLUME to minimum.
2. Press the VOL. DOWN button on the set and the Channel button **(9)** on the remote control for more than 1 second to appear the adjustment mode on the screen as shown in **Fig. 1-1**.

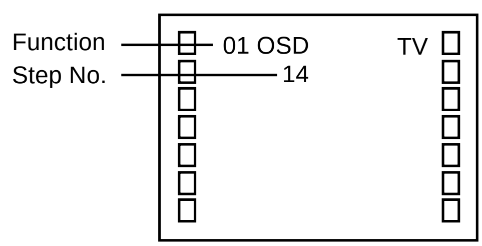


Fig. 1-1

3. Use the Channel UP/DOWN button or Channel button **(1-0)** on the remote control to select the options shown in **Fig. 1-2**.
4. Press the MENU button on the remote control to end the adjustments.

NO.	FUNCTION	NO.	FUNCTION
01	OSD H	36	COL. AV(CENT.)
02	OSD CONTRAST	37	COL. AV(MAX)
03	CUT OFF	38	COL. AV(MIN)
04	H POSITION	39	TINT AV
05	H BLK L	40	SHARPNESS AV
06	H BLK R	41	SUB BIAS
07	V SIZE	42	BRI. DVD(CENT.)
08	V POSITION	43	BRI. DVD(MAX)
09	V LINEARITY	44	BRI. DVD(MIN)
10	V S CORRECTION	45	CONT. DVD(CENT.)
11	V COMP	46	CONT. DVD(MAX)
12	R CUT OFF	47	CONT. DVD(MIN)
13	G CUT OFF	48	COL. DVD(CENT.)
14	B CUT OFF	49	COL. DVD(MAX)
15	R DRIVE	50	COL. DVD(MIN)
16	G DRIVE	51	TINT DVD
17	B DRIVE	52	SHARPNESS DVD
18	BRIGHTNESS(CENT.)	53	SUB BIAS
19	BRIGHTNESS(MAX)	54	BRI. GAME(CENT.)
20	BRIGHTNESS(MIN)	55	BRI. GAME(MAX)
21	CONTRAST(CENT.)	56	BRI. GAME(MIN)
22	CONTRAST(MAX)	57	CONT. GAME(CENT.)
23	CONTRAST(MIN)	58	CONT. GAME(MAX)
24	COLOR(CENT.)	59	CONT. GAME(MIN)
25	COLOR(MAX)	60	SUB BIAS
26	COLOR(MIN)	61	TUNING V MUTE
27	TINT	62	POWER ON V MUTE
28	SHARPNESS	63	INPUT LEVEL
29	SUB BIAS	64	SEPARATION L
30	BRI. AV(CENT.)	65	SEPARATION H
31	BRI. AV(MAX)	66	TEST PWM
32	BRI. AV(MIN)	67	X-RAY TEST
33	CONT. AV(CENT.)	68	H STOP
34	CONT. AV(MAX)	69	H FREQ
35	CONT. AV(MIN)		

Fig. 1-2

2. BASIC ADJUSTMENTS

2-1: CONSTANT VOLTAGE

1. Input DC12V to DC Jack and turn the Power ON.
2. Connect the digital voltmeter to the **TP3801**.
3. Set condition is AV MODE without signal.
4. Adjust the **VR3801** until the digital voltmeter is 101 ± 0.5V.
5. Input AC120V to AC cord, and then remove the DC Jack cord.
6. Adjust the **VR3802** until the digital voltmeter is 102 ± 0.5V.

2-2: FOCUS

1. Receive the monoscope pattern.
2. Turn the Focus Volume fully counterclockwise once.
3. Adjust the **Focus Volume** until picture is distinct.

2-3: CUT OFF

1. Adjust the unit to the following settings.
   R DRIVE=3F, G DRIVE=05, B DRIVE=3F, R CUT OFF=7F, G CUT OFF=7F, B CUT OFF=7F
2. Place the set with Aging Test for more than 15 minutes.
3. Set condition is AV MODE without signal.
4. Using the remote control, set the brightness and contrast to normal position.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(03)** on the remote control to select "CUT OFF".
6. Adjust the **Screen Volume** until a dim raster is obtained.

ELECTRICAL ADJUSTMENTS

2-4: WHITE BALANCE

NOTE: Adjust after performing CUT OFF adjustment.

1. Place the set with Aging Test for more than 15 minutes.
2. Receive the gray scale pattern from the Pattern Generator.
3. Using the remote control, set the brightness and contrast to normal position.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(16)** on the remote control to select "G DRV".
5. Press the CH. UP/DOWN button on the remote control to select the "R CUT", "G CUT", "B CUT", "R DRV" or "B DRV".
6. Adjust the VOL. UP/DOWN button on the remote control to whiten the R CUT, G CUT, B CUT, R DRV, and B DRV at each step tone sections equally.
7. Perform the above adjustments 5 and 6 until the white color is looked like a white.

2-5: HORIZONTAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(04)** on the remote control to select "HPOSI".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on right and left becomes minimum.

2-6: VERTICAL POSITION

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(08)** on the remote control to select "VPOSI".
4. Check if the step No. V POSI is "02".
5. Adjust the **VR401** until the horizontal line becomes fit to notch of the shadow mask.

2-7: VERTICAL SIZE

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(07)** on the remote control to select "VSIZE".
4. Press the VOL. UP/DOWN button on the remote control until the Up/Down OVER SCAN Quantity becomes equal to the Right/Left OVER SCAN Quantity.
5. Receive a broadcast and check if the picture is normal.

2-8: VERTICAL LINEARITY

NOTE: Adjust after performing adjustments in section 2-7. After the adjustment of Vertical Linearity, reconfirm the Vertical Position and Vertical Size adjustments.

1. Receive the monoscope pattern.
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(09)** on the remote control to select "VLIN".
4. Press the VOL. UP/DOWN button on the remote control until the SHIFT quantity of the OVER SCAN on upside and downside becomes minimum.

2-9: SEPARATION

Please do the method (1) or method (2) adjustment.

Method (1)

1. Set the multi-sound signal generator for each different L-ch and R-ch frequency (Ex. L-ch=2KHz, R-ch=400Hz) and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(64)** on the remote control to select “SEPAL”.
5. Press the VOL. UP/DOWN button on the remote control to adjust it until the audio output wave becomes a fine sine wave.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the VOL. UP/DOWN button on the remote control to adjust it until the audio output wave becomes a fine sine wave.

Method (2)

1. Set the multi-sound signal generator L-ch=1KHz, R-ch =Non input and receive the RF signal.
2. Connect the oscilloscope to the **Audio Out Jack (R-ch)**.
3. Press the AUDIO button on the remote control to set to the stereo mode.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(64)** on the remote control to select “SEPAL”.
5. Press the VOL. UP/DOWN button on the remote control to adjust it until the R-ch output becomes minimum.
6. Press the CH UP button 1 time to set to "SEPAH" mode.
7. Press the VOL. UP/DOWN button on the remote control to adjust it until the R-ch output becomes minimum.
8. Set the multi-sound signal generator L-ch=Non input, R-ch=1KHz and receive the RF signal.
9. Connect the oscilloscope to the **Audio Out Jack (L-ch)**. Then perform the above adjustments 3~7.

ELECTRICAL ADJUSTMENTS

2-10: OSD HORIZONTAL

1. Activate the adjustment mode display of **Fig. 1-1**.
2. Press the VOL. UP/DOWN button on the remote control until the difference of A and B becomes minimum. **(Refer to Fig. 2-1)**

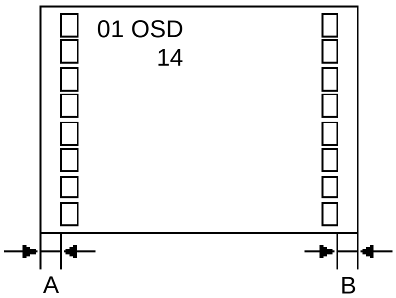


Fig. 2-1

2-11: LEVEL

1. Receive the VHF HIGH (70dB).
2. Connect the AC voltmeter to **pin 6 of CP101**.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(63)** on the remote control to select "LVL".
4. Press the VOL. UP/DOWN button on the remote control until the AC voltmeter is 80 $\pm$ 2mV.

2-12: BRIGHT CENTER

1. Receive the monoscope pattern. (RF Input)
2. Using the remote control, set the brightness and contrast to normal position.
3. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(18)** on the remote control to select "BRTC".
4. Press the VOL. UP/DOWN button on the remote control until the white 15% is starting to be visible
5. Receive the monoscope pattern. (Audio Video Input)
6. Press the INPUT SELECT button on the remote control to set to the AV mode.
7. Using the remote control, set the brightness and contrast to normal position.
8. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(30)** on the remote control to select "BRTCA".
9. Press the VOL. UP/DOWN button on the remote control until the white 15% is starting to be visible
10. Press the TV/DVD button on the remote control to set to the DVD mode.
11. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(42)** on the remote control to select "BRTCD".
12. Press the VOL. UP/DOWN button on the remote control to increase the step numbers by 5 steps to the AV.

2-13: TINT CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP024**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(27)** on the remote control to select "TNTC".
5. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
6. Receive the color bar pattern. (Audio Video Input)
7. Press the INPUT SELECT button on the remote control to set to the AV mode.
8. Using the remote control, set the brightness, contrast, color and tint to normal position.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(39)** on the remote control to select "TNTCA".
10. Press the VOL. UP/DOWN button on the remote control until the section "A" becomes a straight line. **(Refer to Fig. 2-2)**
11. Press the TV/DVD button on the remote control to set to the DVD mode.
12. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(51)** on the remote control to select "TNTCD".
13. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

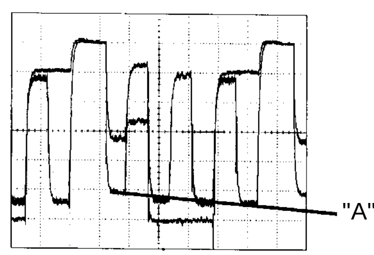


Fig. 2-2

ELECTRICAL ADJUSTMENTS

2-14: COLOR CENTER

1. Receive the color bar pattern. (RF Input)
2. Using the remote control, set the brightness, contrast, color and tint to normal position.
3. Connect the oscilloscope to **TP022**.
4. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(24)** on the remote control to select "COLC".
5. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
6. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 90 ± 5% of the white level. **(Refer to Fig. 2-3)**
7. Receive the color bar pattern. (Audio Video Input)
8. Press the INPUT SELECT button on the remote control to set to the AV mode.
9. Using the remote control, set the brightness, contrast, color and tint to normal position.
10. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(36)** on the remote control to select "COLCA".
11. Adjust the VOLTS RANGE VARIABLE knob of the oscilloscope until the range between white 100% and 0% is set to 4 scales on the screen of the oscilloscope.
12. Press the VOL. UP/DOWN button on the remote control until the red color level is adjusted to 90 ± 5% of the white level. **(Refer to Fig. 2-3)**
13. Press the TV/DVD button on the remote control to set to the DVD mode.
14. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(48)** on the remote control to select "COLCD".
15. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

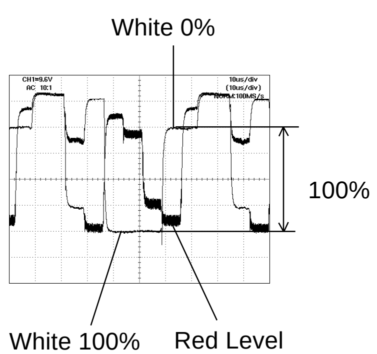


Fig. 2-3

2-15: CONTRAST MAX

1. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(22)** on the remote control to select "CNTX".
2. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "4A"
3. Receive a broadcast and check if the picture is normal.
4. Press the INPUT SELECT button on the remote control to set to the AV mode.
5. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(34)** on the remote control to select "CNTXA".
6. Press the VOL. UP/DOWN button on the remote control until the contrast step No. becomes "4A"
7. Receive a broadcast and check if the picture is normal.
8. Press the TV/DVD button on the remote control to set to the DVD mode.
9. Activate the adjustment mode display of **Fig. 1-1** and press the channel button **(46)** on the remote control to select "CNTXD".
10. Press the VOL. UP/DOWN button on the remote control to set the same step numbers as the AV.

2-16: Confirmation of Fixed Value (Step No.)

Please check if the fixed values of the each adjustment items are set correctly referring below.

NO.	FUNCTION	STEP NO.	NO.	FUNCTION	STEP NO.
02	OSD CONTRAST	00	38	COL. AV(MIN)	05
05	H BLK L	00	40	SHARPNESS AV	11
06	H BLK R	00	41	SUB BIAS	00
08	V POSITION	02	43	BRI. DVD(MAX)	50
10	V S CORRECTION	0C	44	BRI. DVD(MIN)	25
11	V COMP	03	45	CONT. DVD(CENT.)	30
16	G DRIVE	05	47	CONT. DVD(MIN)	00
19	BRIGHTNESS(MAX)	50	49	COL. DVD(MAX)	70
20	BRIGHTNESS(MIN)	2F	50	COL. DVD(MIN)	05
21	CONTRAST(CENT.)	30	52	SHARPNESS DVD	05
23	CONTRAST(MIN)	00	53	SUB BIAS	00
25	COLOR(MAX)	70	55	BRI. GAME(MAX)	50
26	COLOR(MIN)	05	56	BRI. GAME(MIN)	2F
28	SHARPNESS	11	57	CONT. GAME(CENT.)	30
29	SUB BIAS	00	59	CONT. GAME(MIN)	00
31	BRI. AV(MAX)	50	60	SUB BIAS	00
32	BRI. AV(MIN)	2F	61	TUNING V MUTE	00
33	CONT. AV(CENT.)	30	62	POWER ON V MUTE	40
35	CONT. AV(MIN)	00	68	H FREQ	3F
37	COL. AV(MAX)	70			

ELECTRICAL ADJUSTMENTS

3. PURITY AND CONVERGENCE ADJUSTMENTS

NOTE

1. Turn the unit on and let it warm up for at least 30 minutes before performing the following adjustments.
2. Place the CRT surface facing east or west to reduce the terrestrial magnetism.
3. Turn ON the unit and demagnetize with a Degauss Coil.

3-1: STATIC CONVERGENCE (ROUGH ADJUSTMENT)

1. Tighten the screw for the magnet. Refer to the adjusted CRT for the position. **(Refer to Fig. 3-1)**
   If the deflection yoke and magnet are in one body, untighten the screw for the body.
2. Receive the green raster pattern from the color bar generator.
3. Slide the deflection yoke until it touches the funnel side of the CRT.
4. Adjust center of screen to green, with red and blue on the sides, using the pair of purity magnets.
5. Switch the color bar generator from the green raster pattern to the crosshatch pattern.
6. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
7. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.
8. Adjust the crosshatch pattern to change to white by repeating steps 6 and 7.

3-2: PURITY

NOTE

Adjust after performing adjustments in section 3-1.

1. Receive the green raster pattern from color bar generator.
2. Adjust the pair of purity magnets to center the color on the screen.
   Adjust the pair of purity magnets so the color at the ends are equally wide.
3. Move the deflection yoke backward (to neck side) slowly, and stop it at the position when the whole screen is green.
4. Confirm red and blue colors.
5. Adjust the slant of the deflection yoke while watching the screen, then tighten the fixing screw.

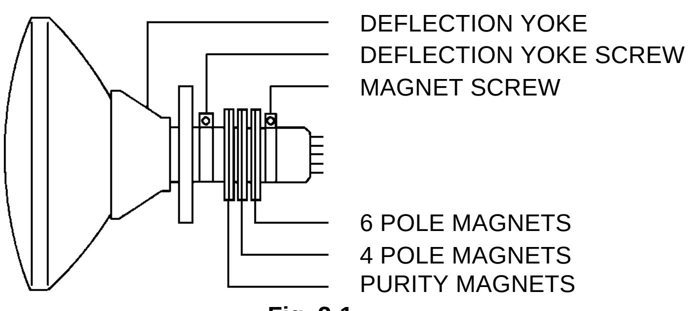


Fig. 3-1

3-3: STATIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-2.

1. Receive the crosshatch pattern from the color bar generator.
2. Combine red and blue of the 3 color crosshatch pattern on the center of the screen by adjusting the pair of 4 pole magnets.
3. Combine red/blue (magenta) and green by adjusting the pair of 6 pole magnets.

3-4: DYNAMIC CONVERGENCE

NOTE

Adjust after performing adjustments in section 3-3.

1. Adjust the differences around the screen by moving the deflection yoke upward/downward and right/left. **(Refer to Fig. 3-2-a)**
2. Insert three wedges between the deflection yoke and CRT funnel to fix the deflection yoke. **(Refer to Fig. 3-2-b)**

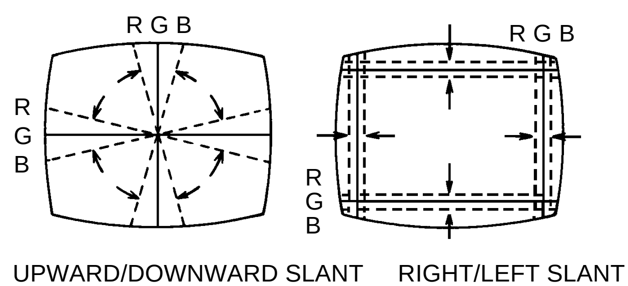
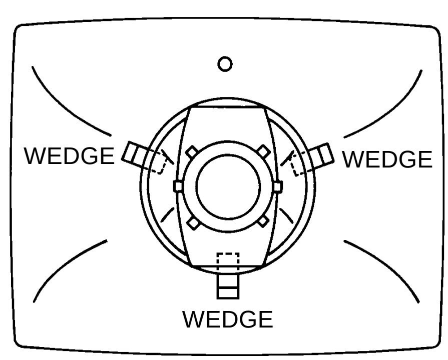


Fig. 3-2-a

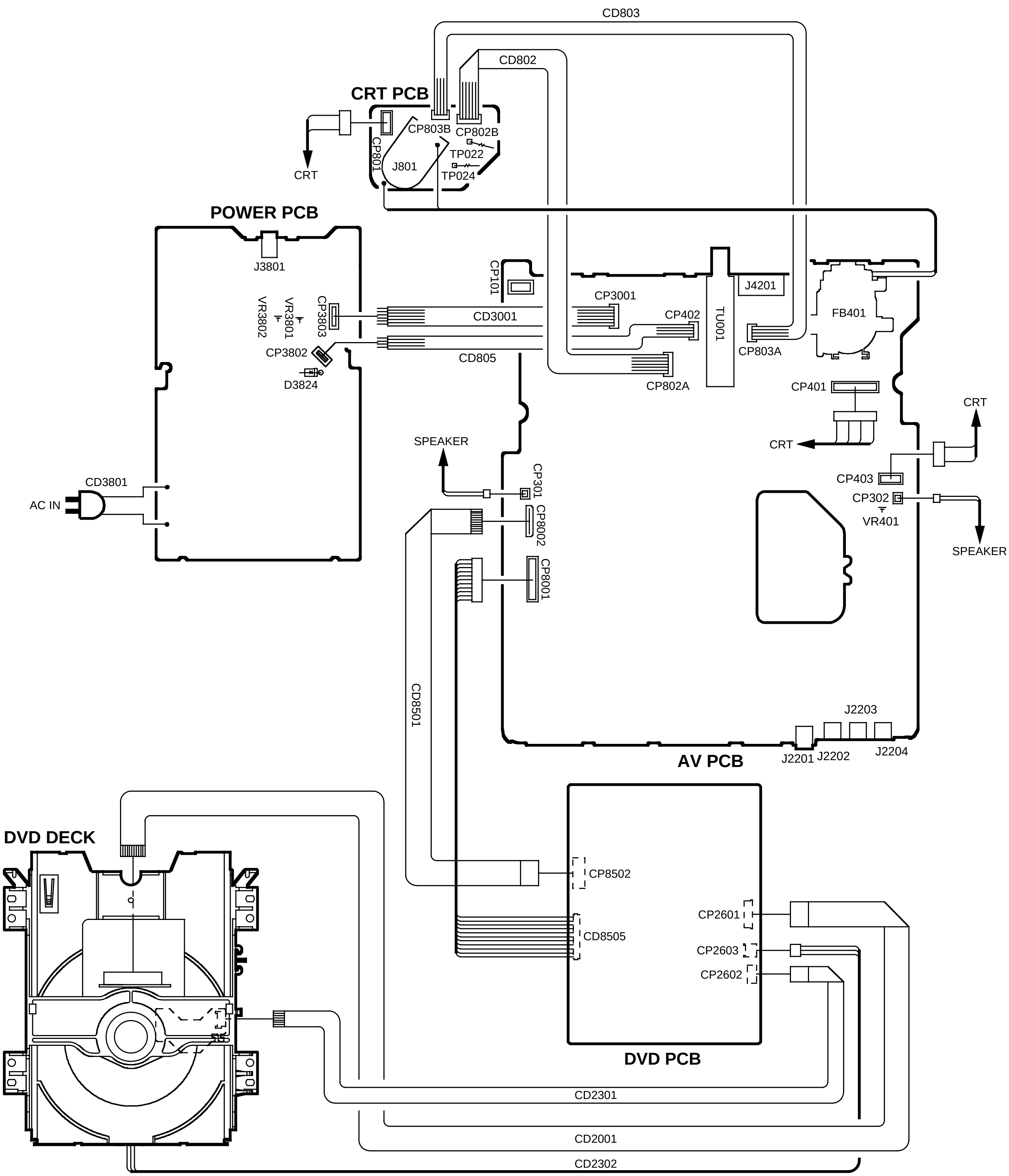


WEDGE POSITION

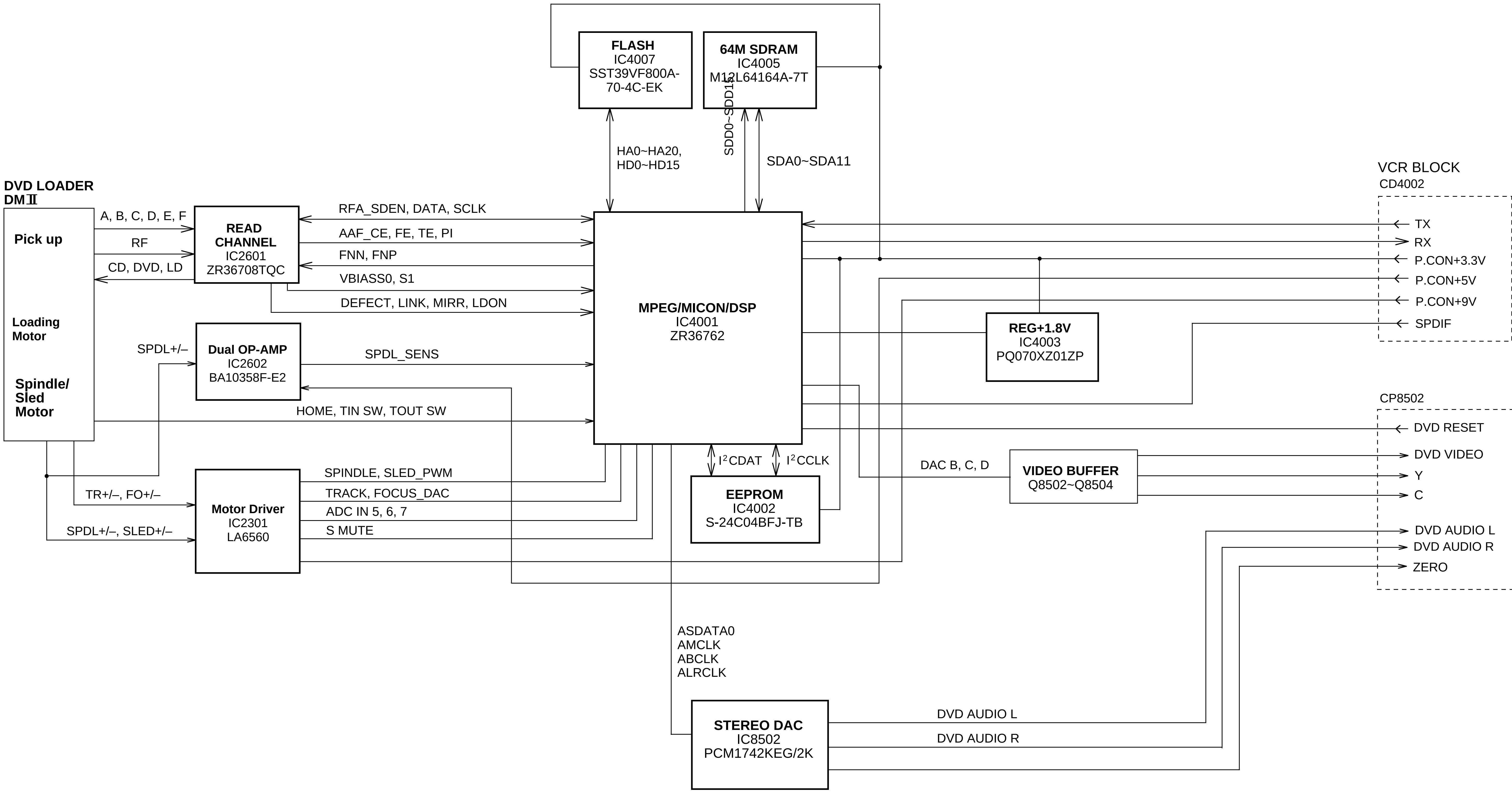
Fig. 3-2-b

ELECTRICAL ADJUSTMENTS

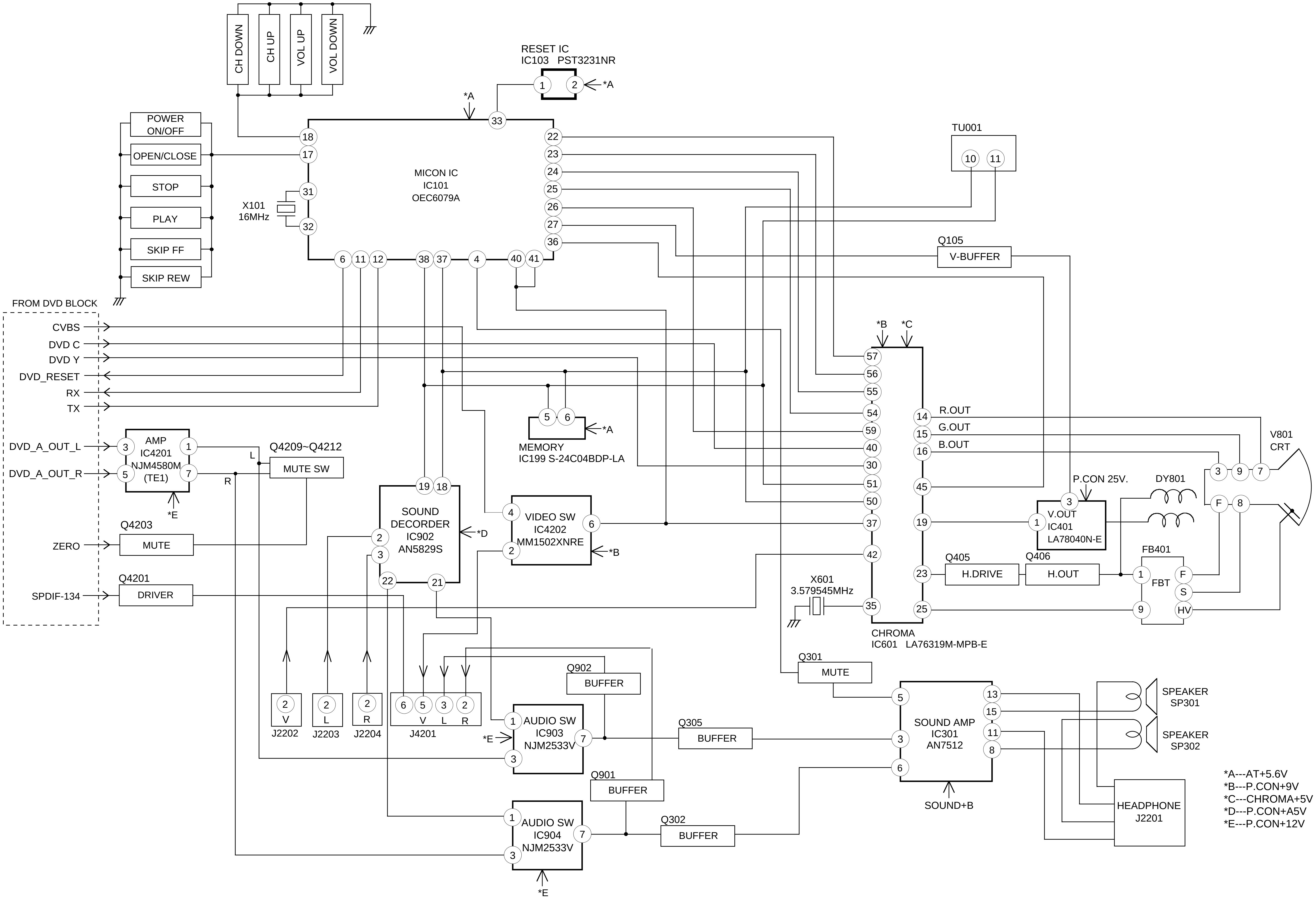
4. ELECTRICAL ADJUSTMENT PARTS LOCATION GUIDE (WIRING CONNECTION)



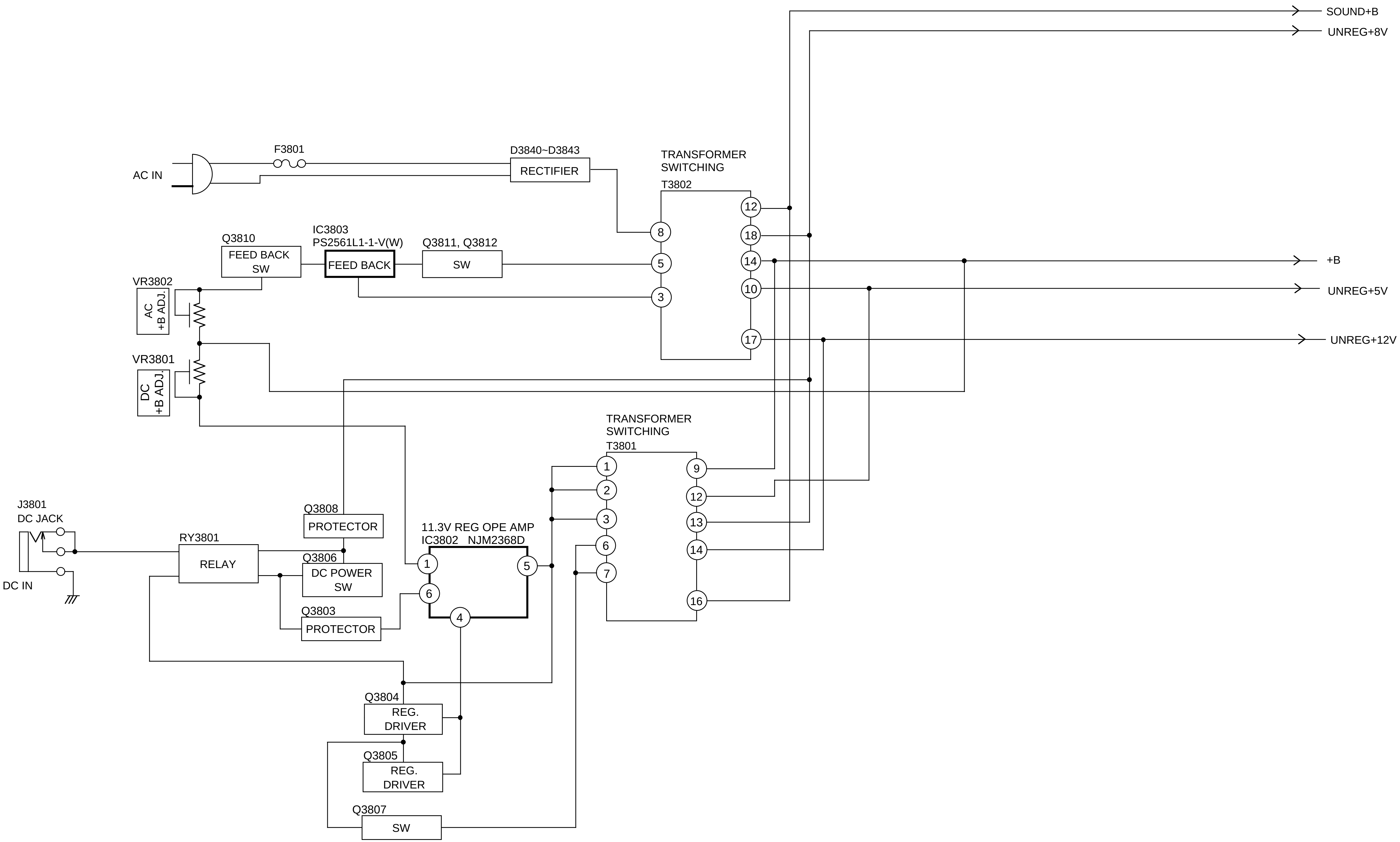
DVD BLOCK DIAGRAM



TV BLOCK DIAGRAM

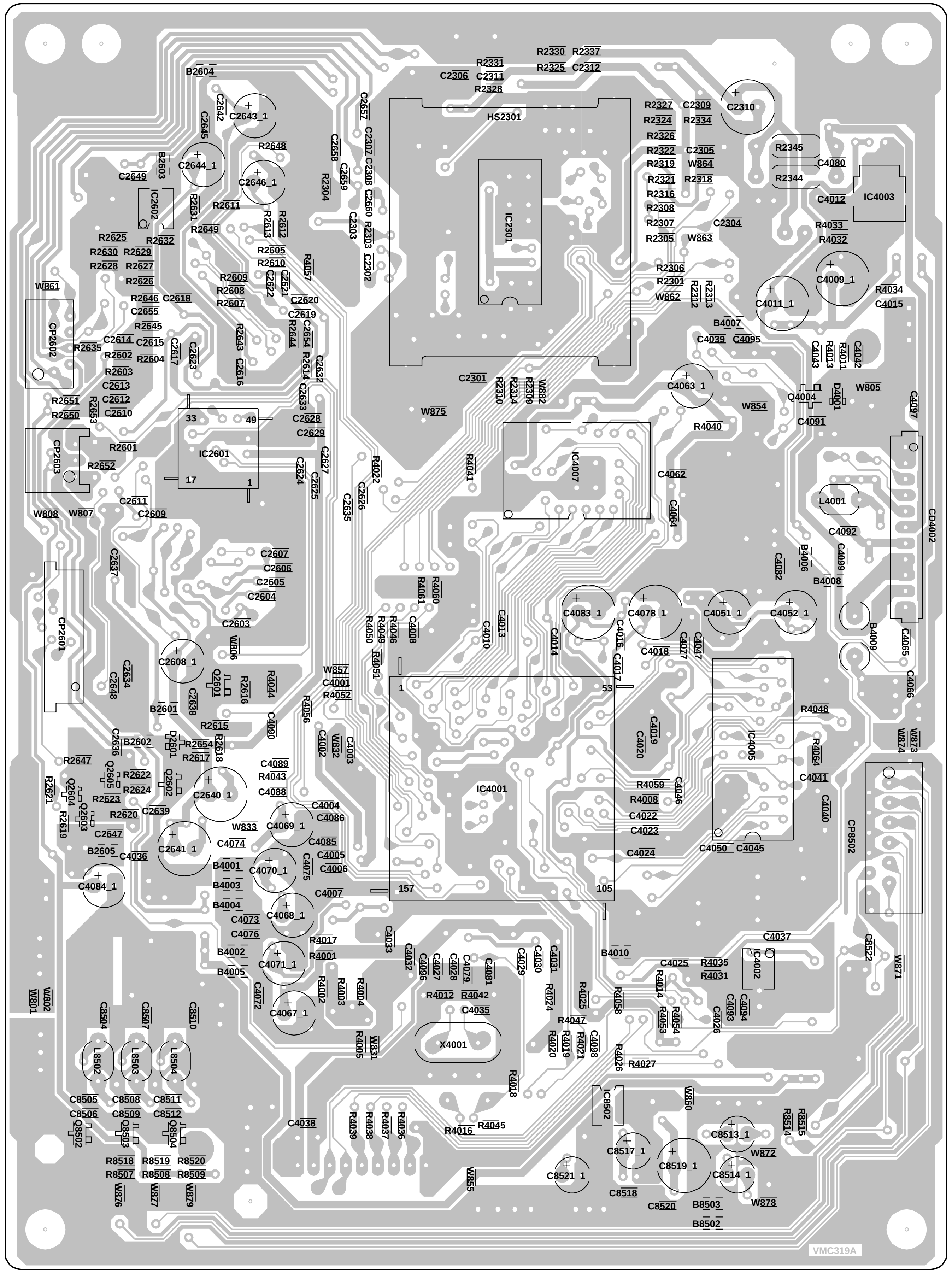


POWER BLOCK DIAGRAM

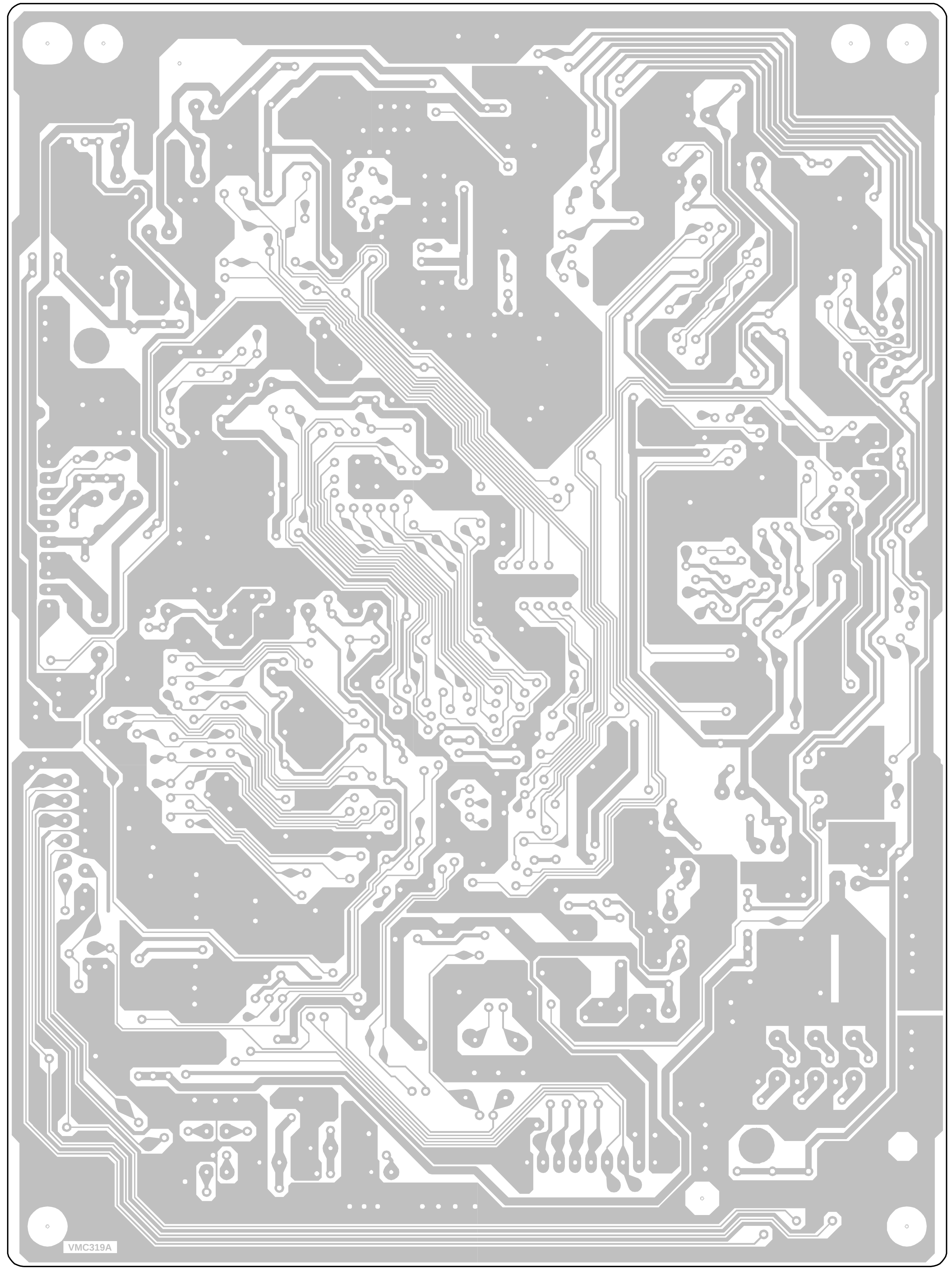


PRINTED CIRCUIT BOARDS

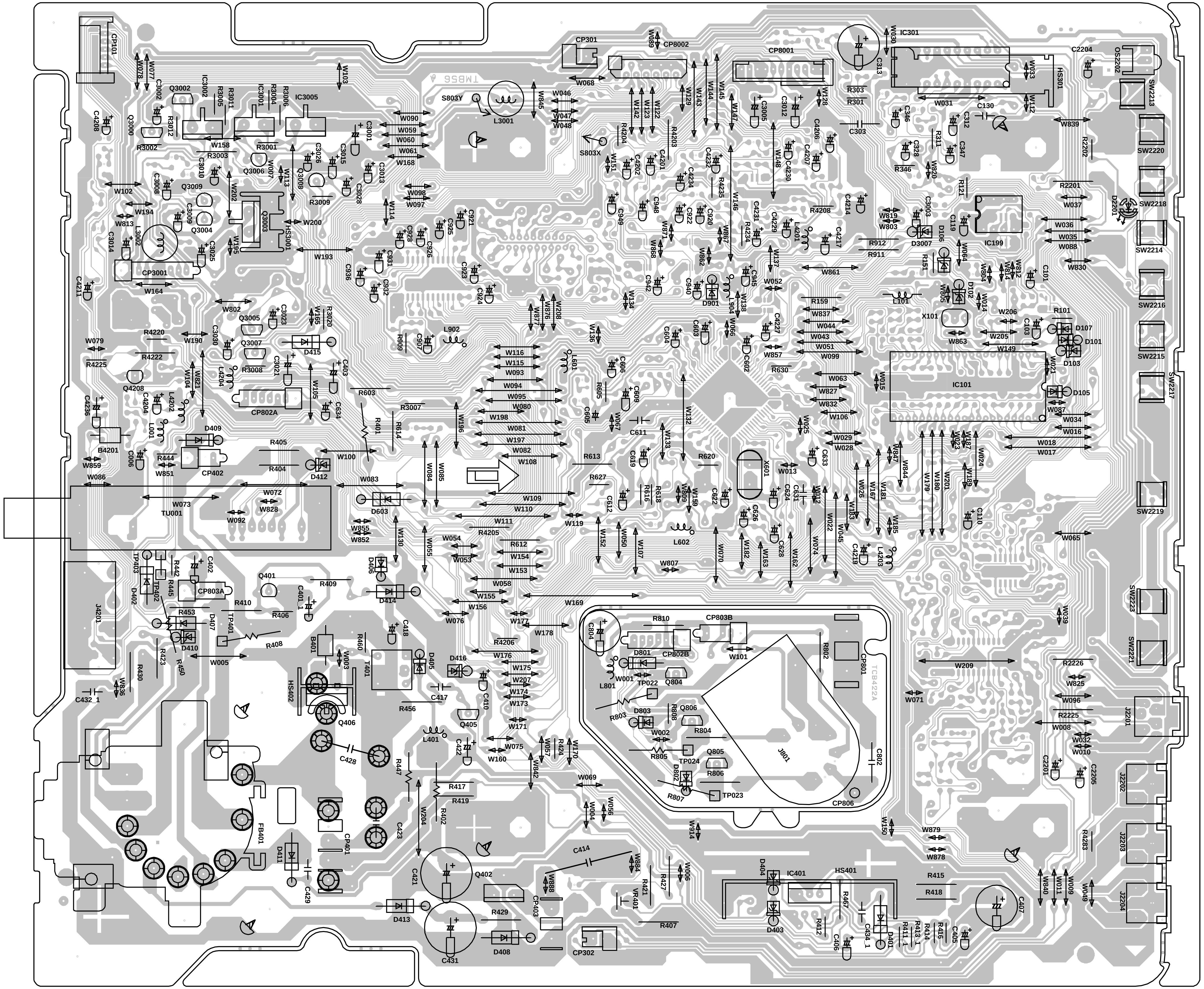
DVD (TOP SIDE)



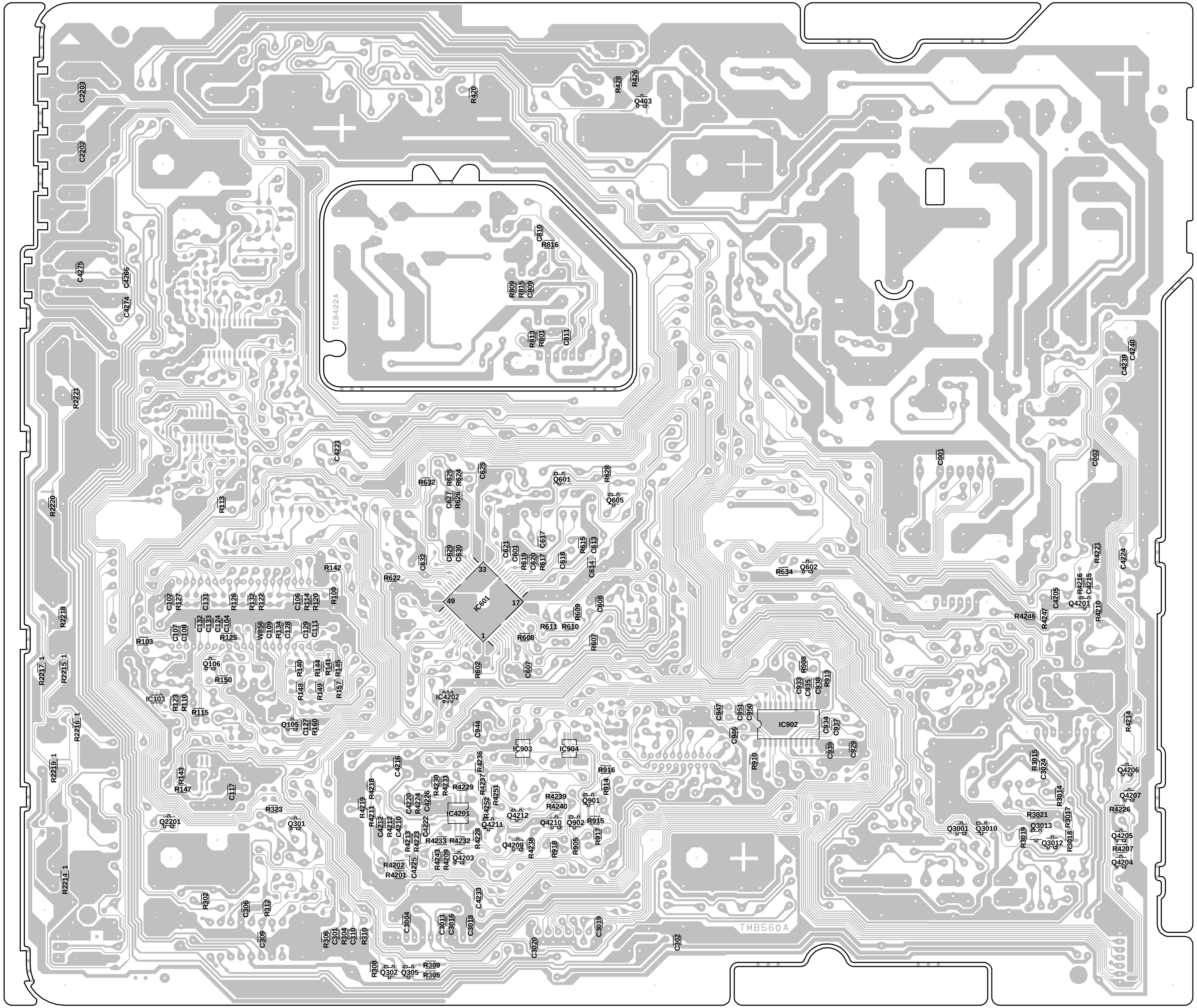
DVD (BOTTOM SIDE)



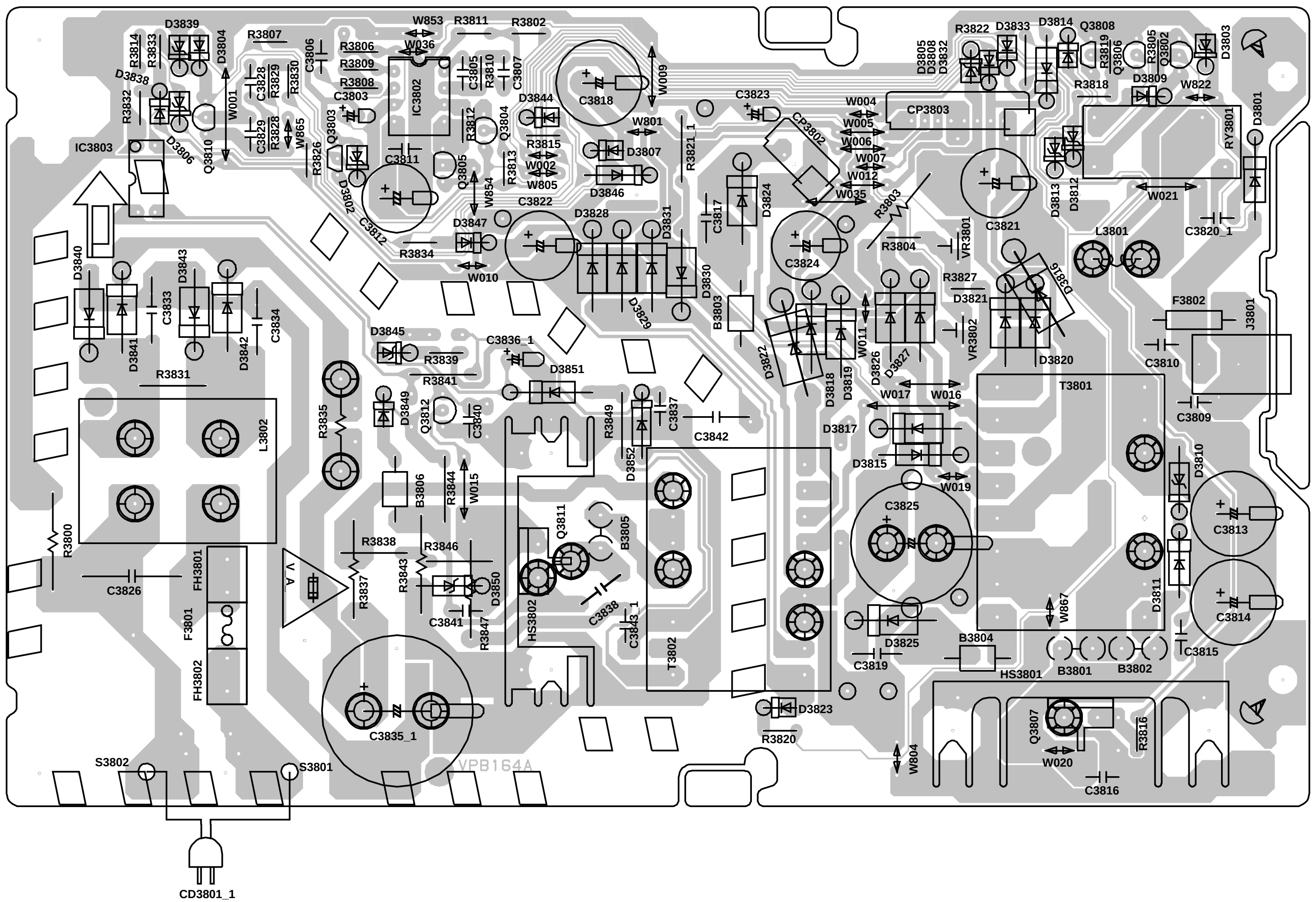
PRINTED CIRCUIT BOARDS
AV/CRT (INSERTED PARTS)
SOLDER SIDE



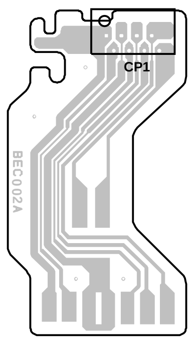
PRINTED CIRCUIT BOARDS
AV/CRT (CHIP MOUNTED PARTS)
SOLDER SIDE



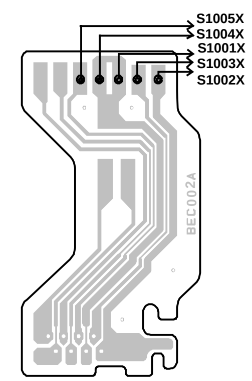
POWER
SOLDER SIDE



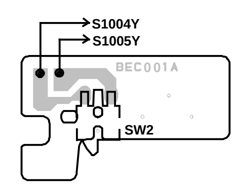
RELAY (INSERTED PARS)
SOLDER SIDE



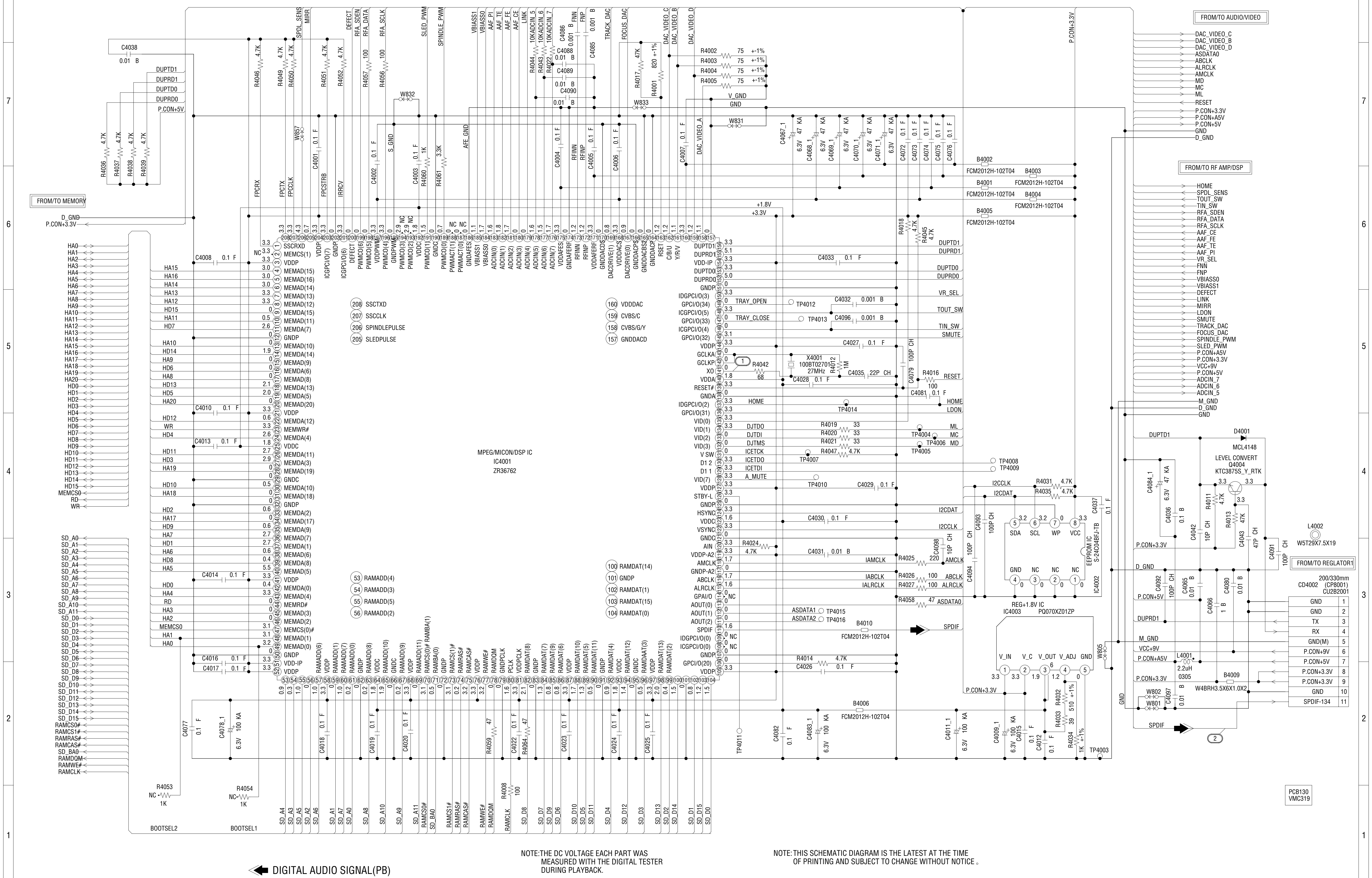
RELAY (CHIP MOUNTED PARS)
SOLDER SIDE



SW
SOLDER SIDE



MPEG/MICON SCHEMATIC DIAGRAM
(DVD PCB)

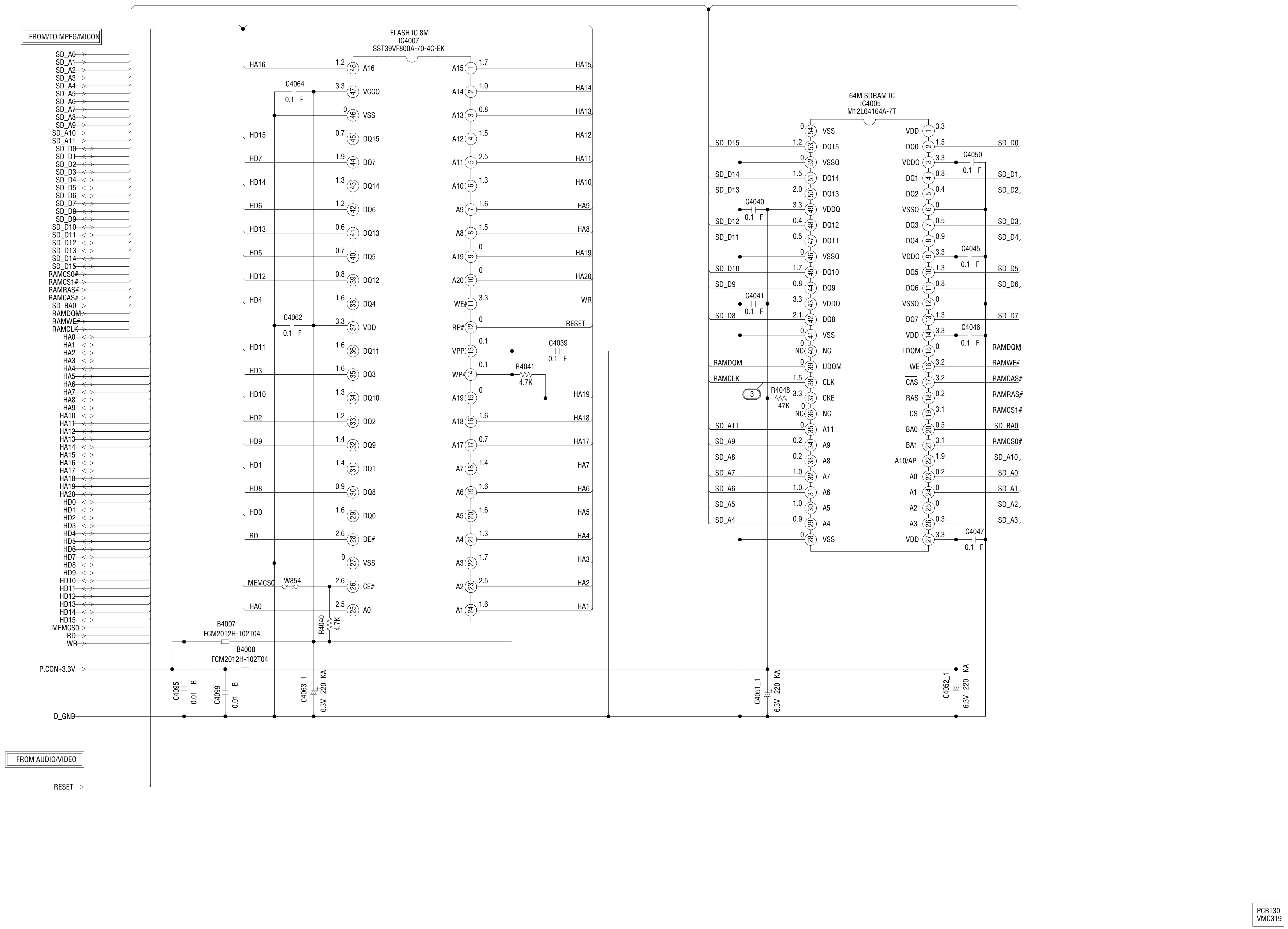


NOTE:THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

MEMORY SCHEMATIC DIAGRAM

(DVD PCB)

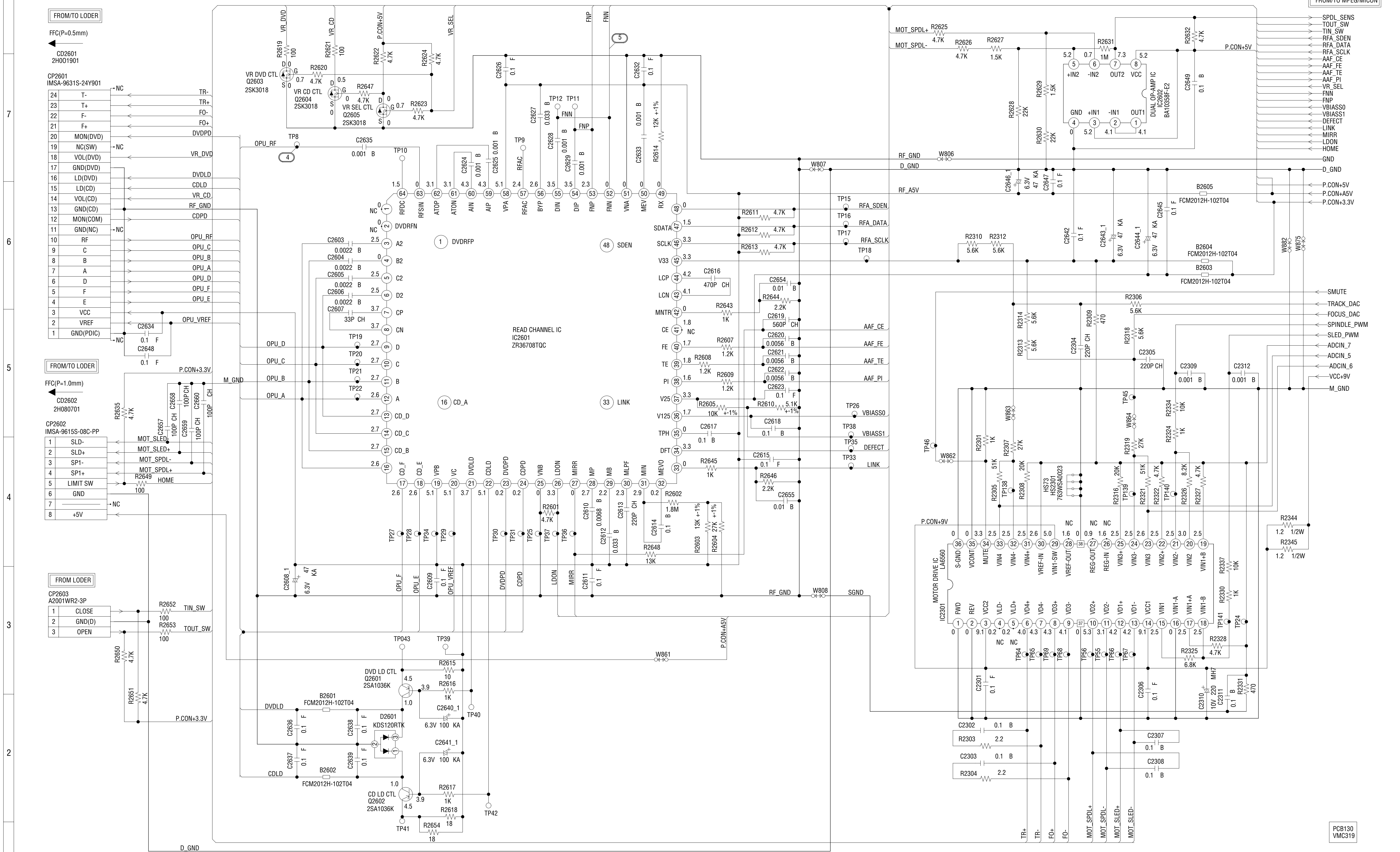


NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

RF AMP/DSP SCHEMATIC DIAGRAM

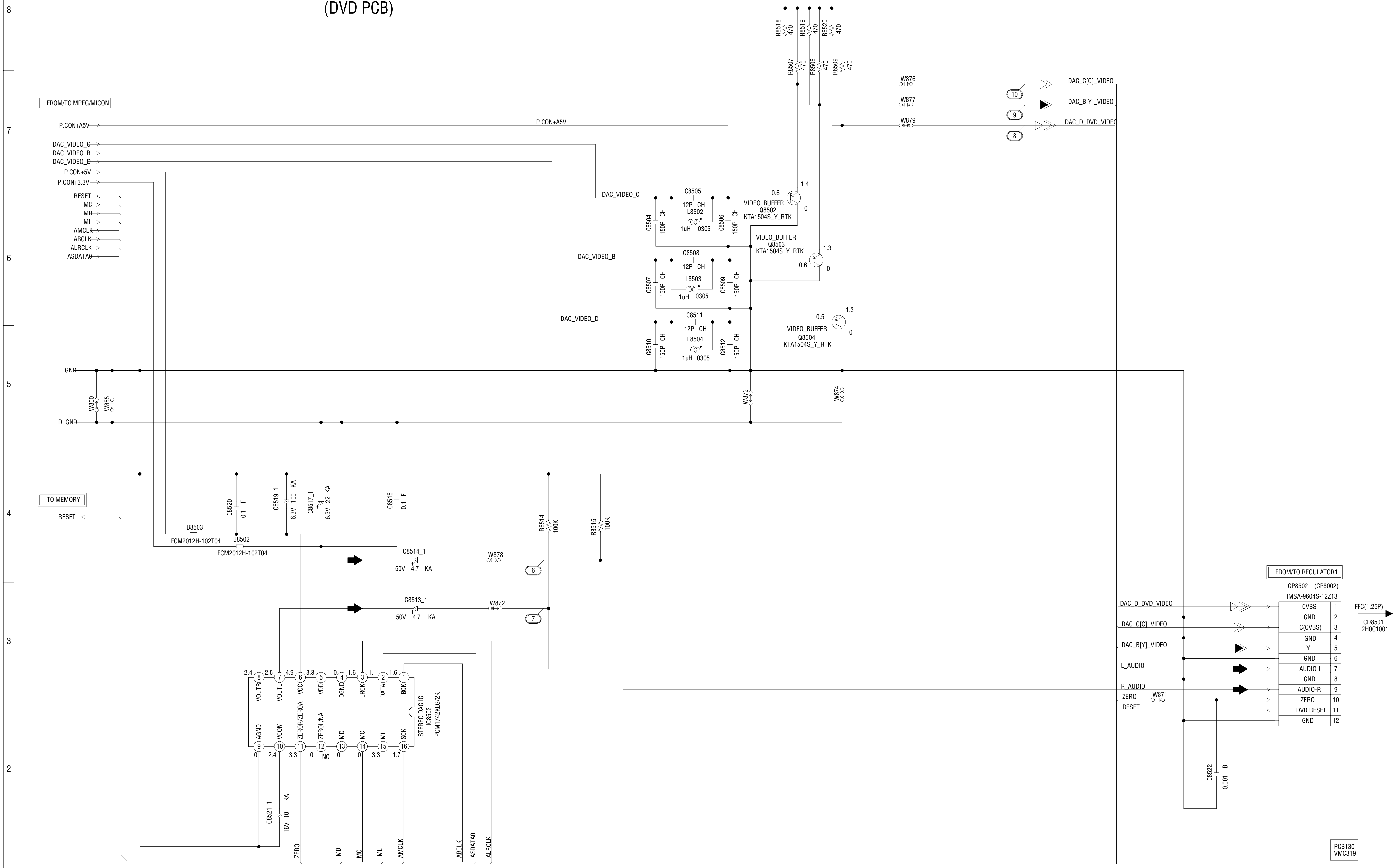
(DVD PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

AUDIO/VIDEO SCHEMATIC DIAGRAM
(DVD PCB)



◁ PLAYBACK COLOR SIGNAL
◀ PLAYBACK LUMINANCE SIGNAL
◁◁ PLAYBACK VIDEO SIGNAL
AUDIO SIGNAL(PB)
DIGITAL AUDIO SIGNAL(PB)

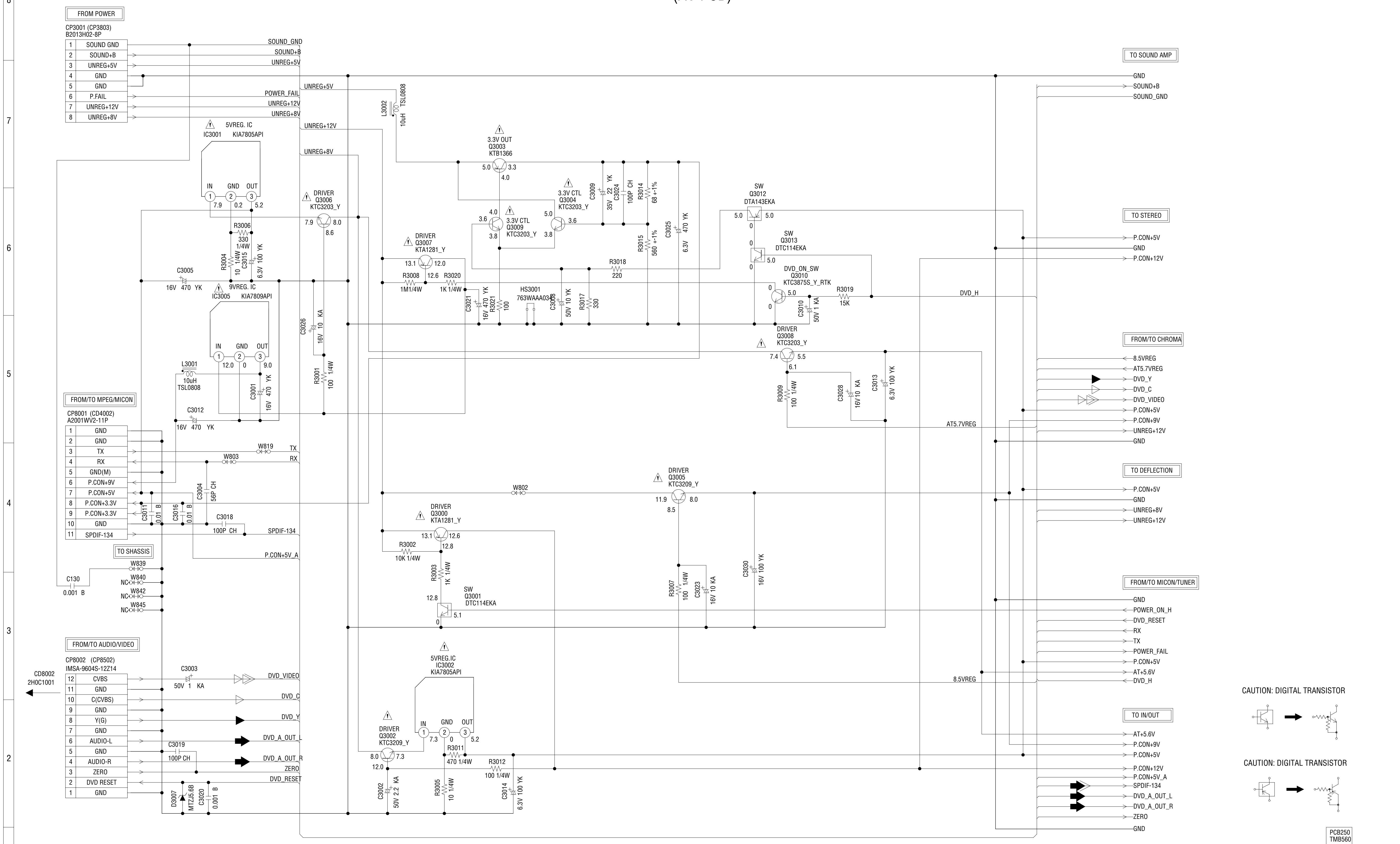
R.SIGNAL+ COMPONENT SIGNAL(U)
B.SIGNAL+ COMPONENT SIGNAL(V)

NOTE: THE DC VOLTAGE EACH PART WAS MEASURED WITH THE DIGITAL TESTER DURING PLAYBACK.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

REGULATOR1 SCHEMATIC DIAGRAM

(AV PCB)



NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

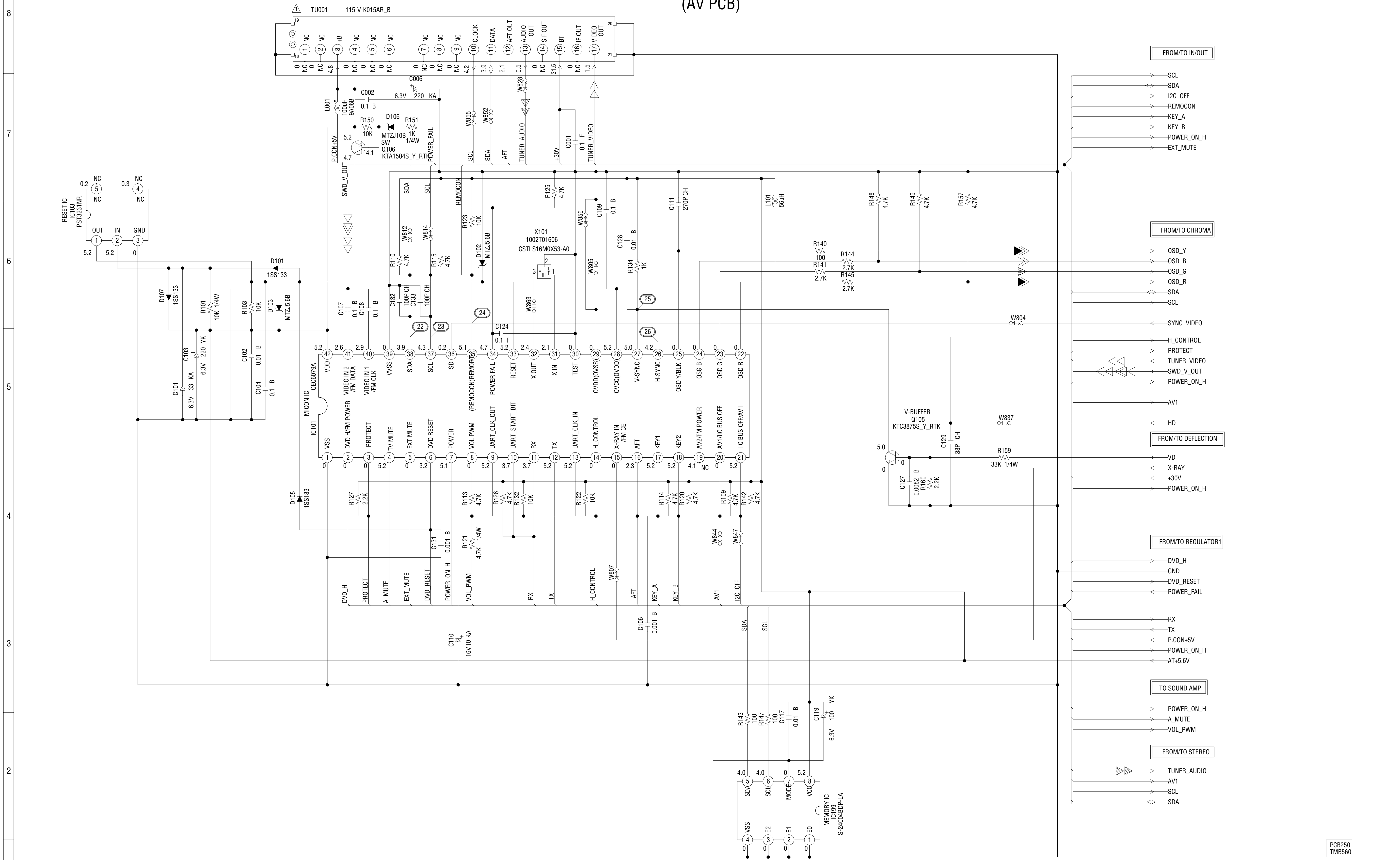
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

- DIGITAL AUDIO SIGNAL(PB)
- PLAYBACK LUMINANCE SIGNAL
- PLAYBACK COLOR SIGNAL
- AUDIO SIGNAL(PB)

MICON/TUNER SCHEMATIC DIAGRAM

(AV PCB)



CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

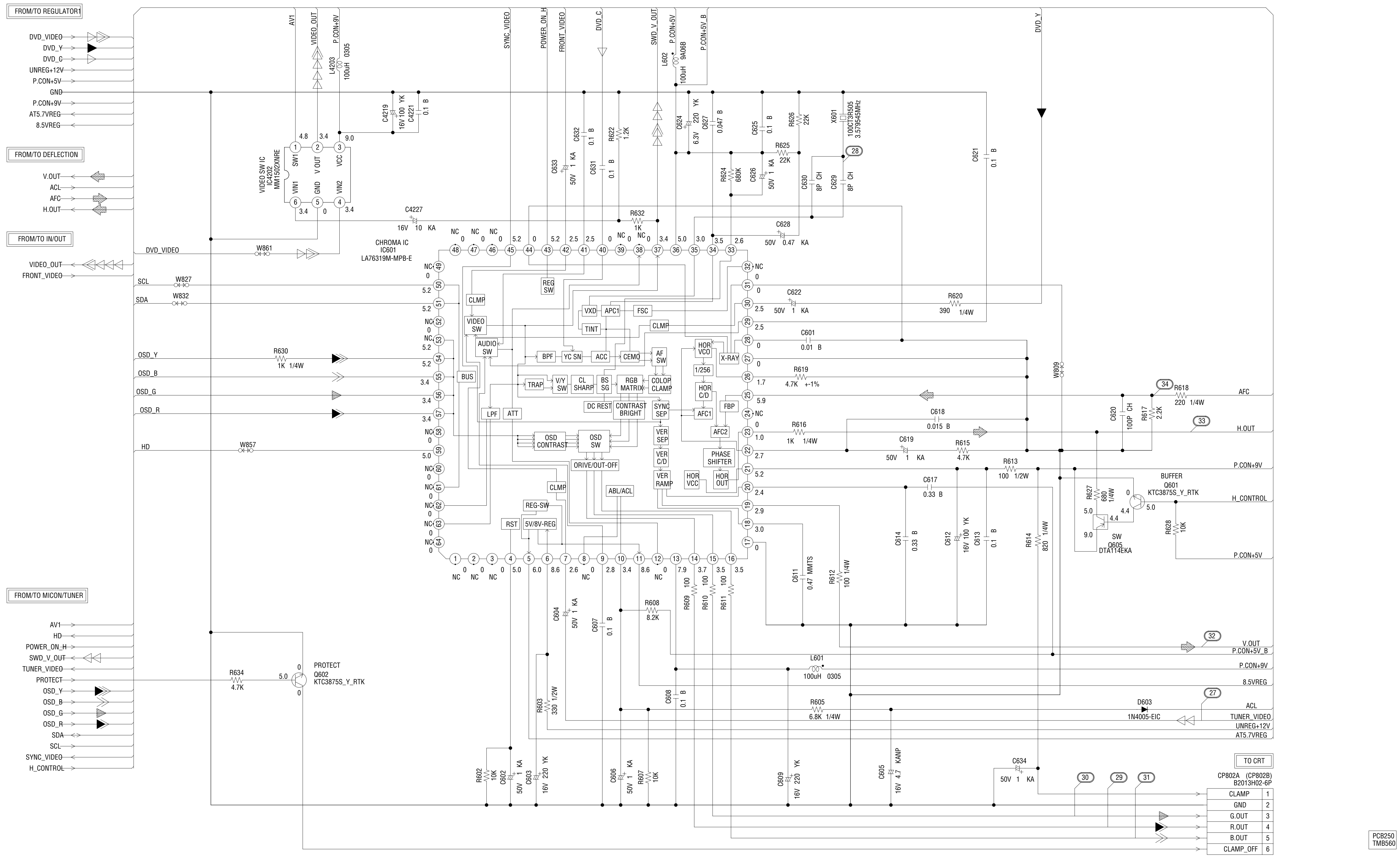
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

B.SIGNAL
G.SIGNAL
R.SIGNAL
LUMINANCE SIGNAL
TUNER VIDEO SIGNAL
PLAYBACK VIDEO SIGNAL
TUNER AUDIO SIGNAL

CHROMA SCHEMATIC DIAGRAM
(AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

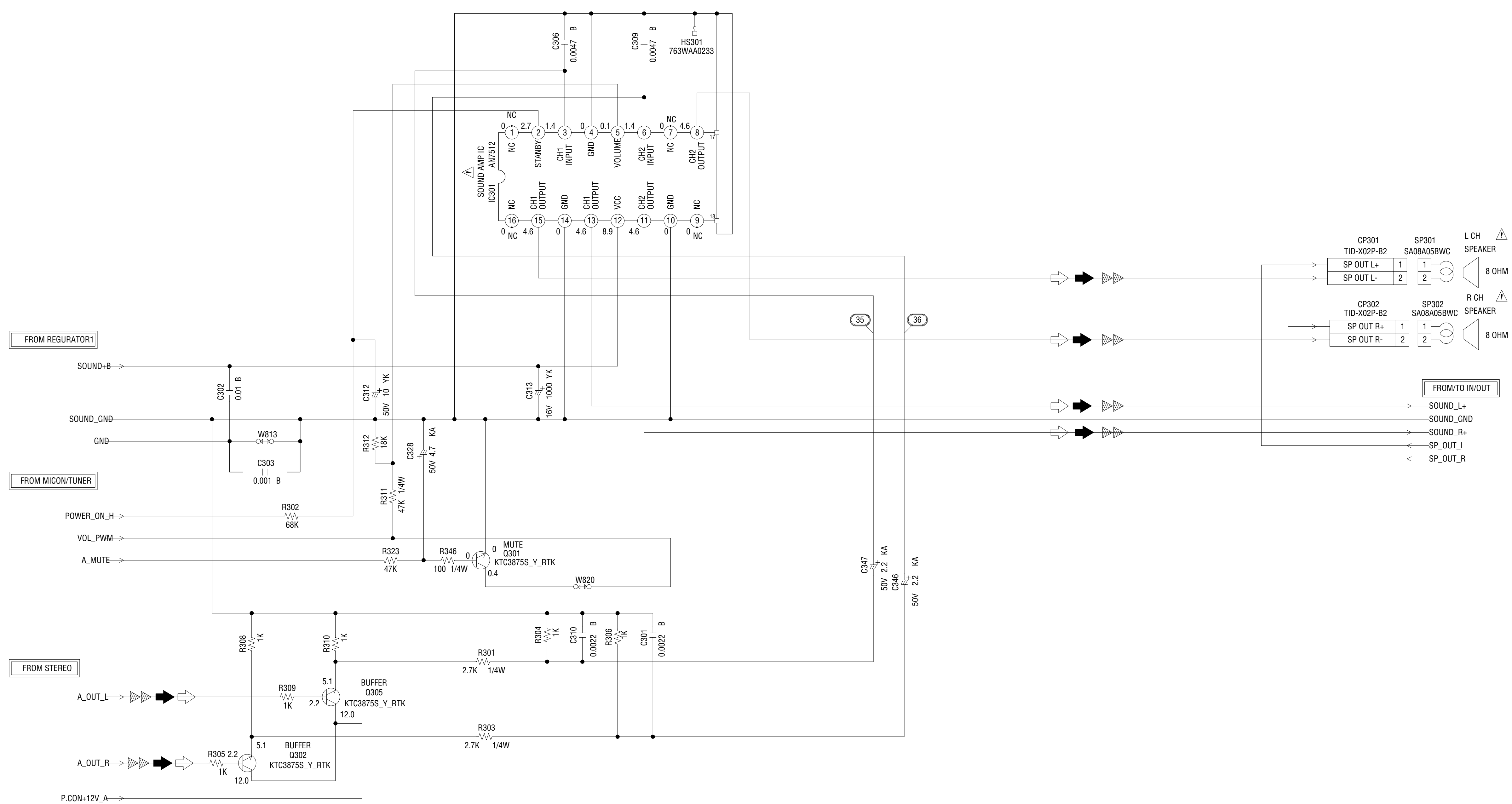
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: DIGITAL TRANSISTOR

B.SIGNAL
G.SIGNAL
R.SIGNAL
LUMINANCE SIGNAL
DEFLECTION SIGNAL
PLAYBACK LUMINANCE SIGNAL
PLAYBACK COLOR SIGNAL
TUNER VIDEO SIGNAL
PLAYBACK VIDEO SIGNAL

SOUND AMP SCHEMATIC DIAGRAM

(AV PCB)



PCB250
TMB560

NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE:THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

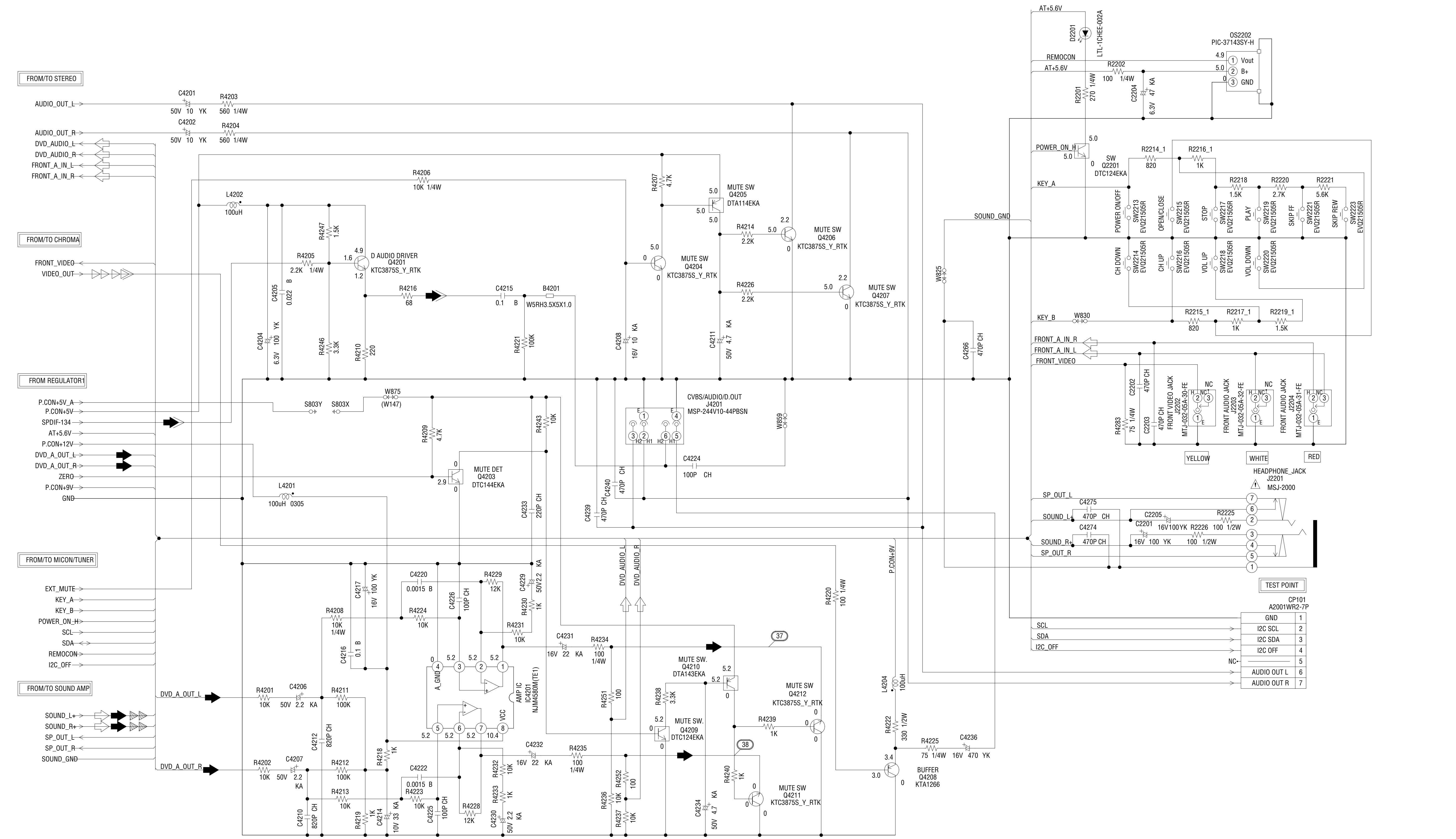
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

AUDIO SIGNAL
AUDIO SIGNAL(PB)
DIGITAL AUDIO SIGNAL(PB)
TUNER AUDIO SIGNAL

IN/OUT SCHEMATIC DIAGRAM

(AV PCB)



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

CAUTION: DIGITAL TRANSISTOR

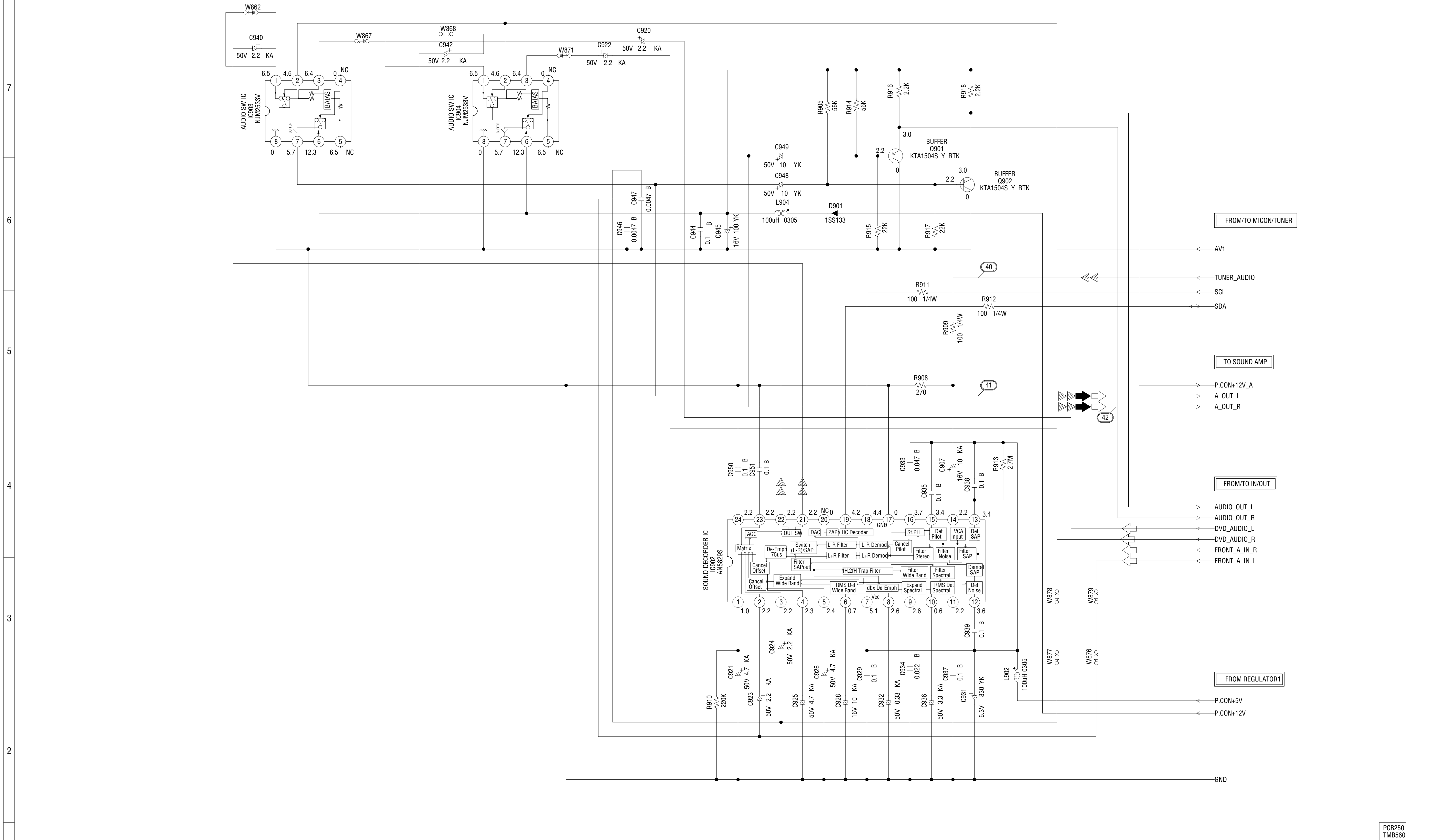
CAUTION: DIGITAL TRANSISTOR

AUDIO SIGNAL
AUDIO SIGNAL(PB)
TUNER AUDIO SIGNAL
DIGITAL AUDIO SIGNAL(PB)
TUNER VIDEO SIGNAL
PLAYBACK VIDEO SIGNAL

PCB250
TMB560

STEREO SCHEMATIC DIAGRAM

(AV PCB)

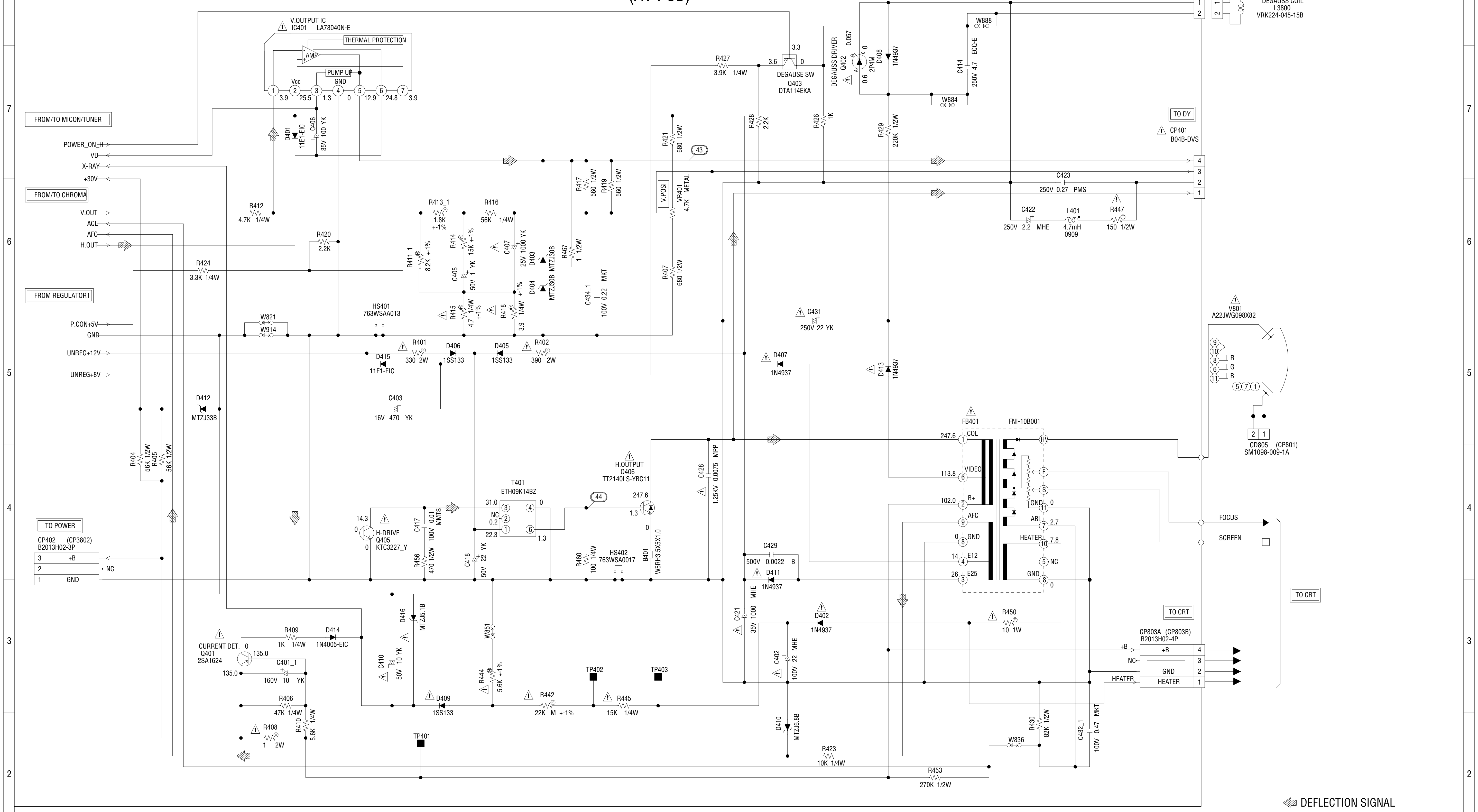


NOTE:THE DC VOLTAGE AT EACH PART WAS MEASURED
WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST
WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME
OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

TUNER AUDIO SIGNAL
AUDIO SIGNAL(PB)
AUDIO SIGNAL

DEFLECTION SCHEMATIC DIAGRAM
(AV PCB)



NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

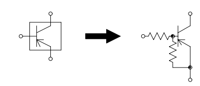
NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE RESISTOR MARKED F IS FUSE RESISTOR. THE ALUMI ELECTROLYTIC CAPACITOR MARKED NP IS NON POLAR ONE.

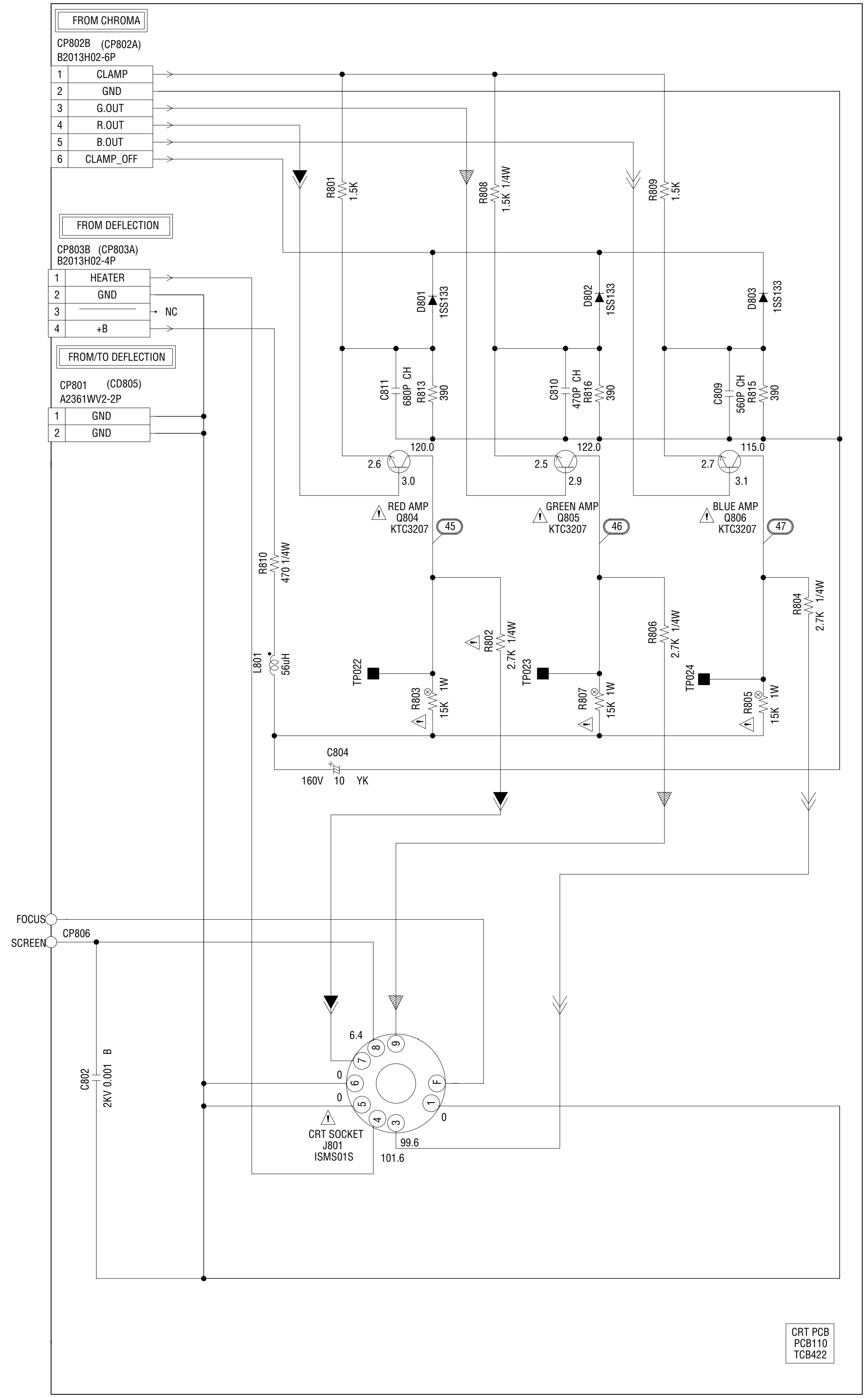
ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

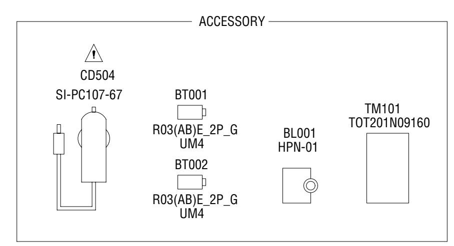
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

CAUTION: DIGITAL TRANSISTOR



CRT SCHEMATIC DIAGRAM
(CRT PCB)





R.SIGNAL
G.SIGNAL
B.SIGNAL

PCB250
TMB560

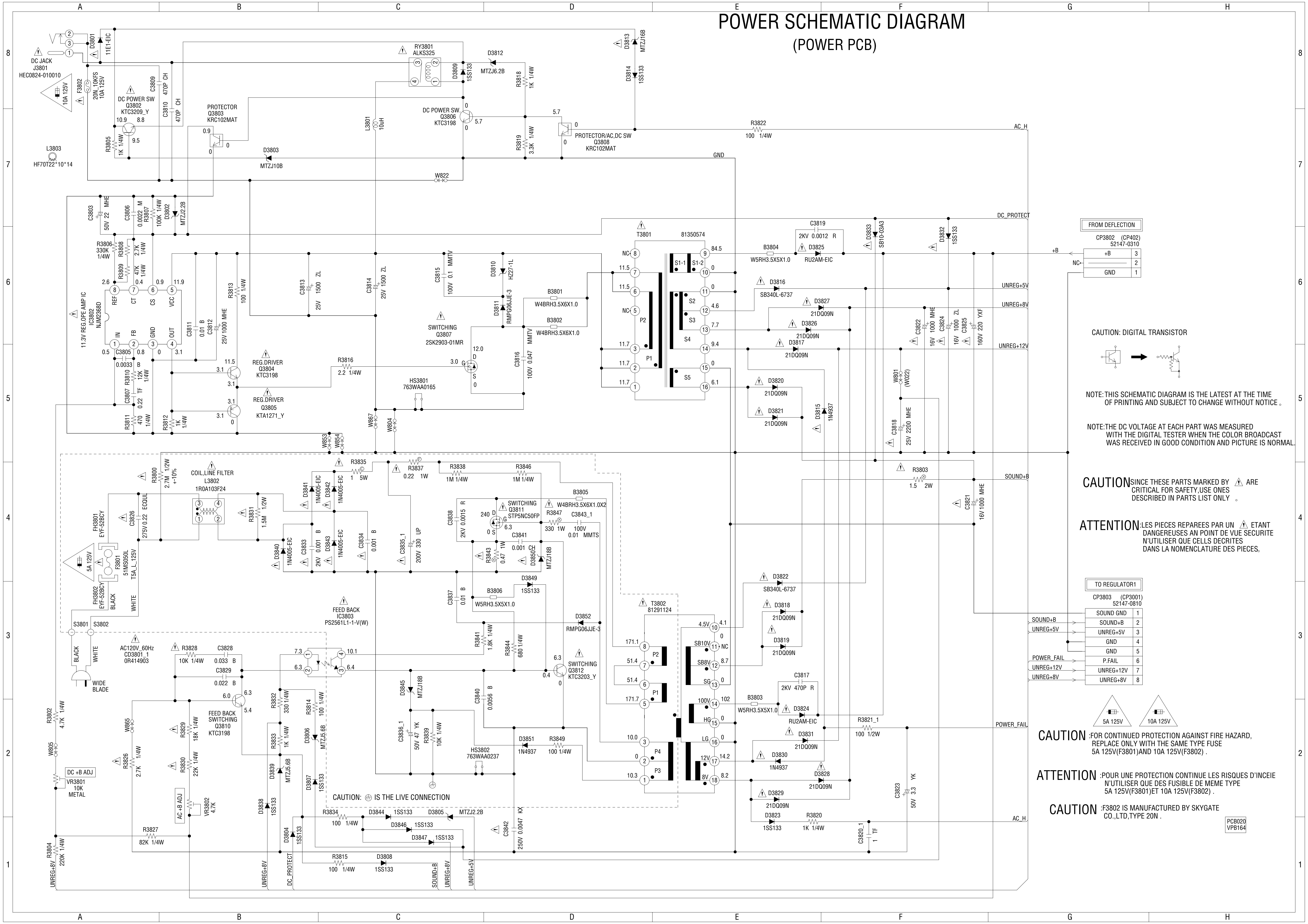
NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

POWER SCHEMATIC DIAGRAM
(POWER PCB)



CAUTION: DIGITAL TRANSISTOR

NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE.

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY, USE ONES DESCRIBED IN PARTS LIST ONLY.

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES.

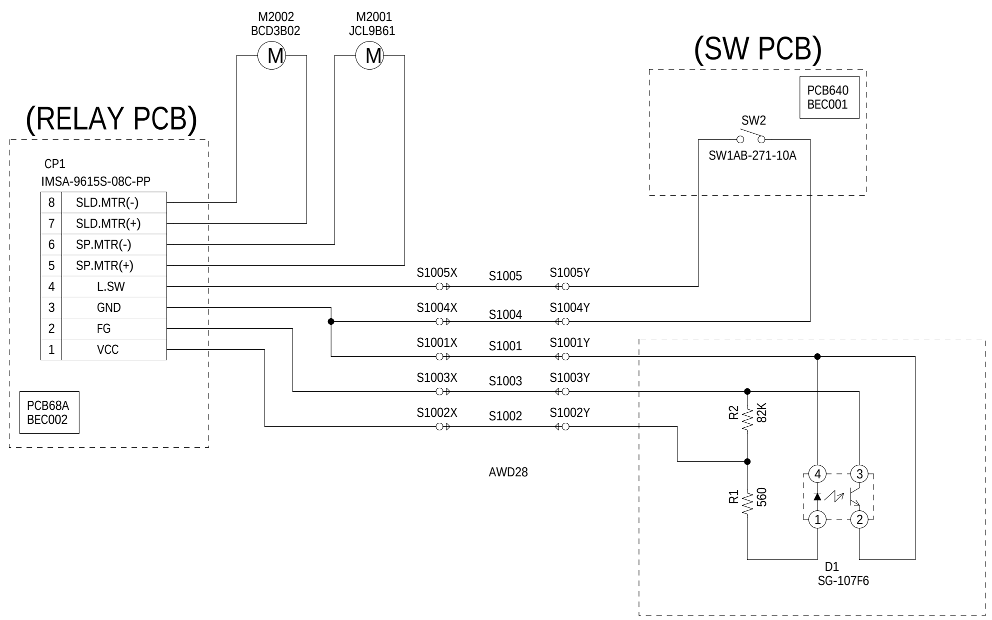
CAUTION: FOR CONTINUED PROTECTION AGAINST FIRE HAZARD, REPLACE ONLY WITH THE SAME TYPE FUSE 5A 125V(F3801) AND 10A 125V(F3802).

ATTENTION: POUR UNE PROTECTION CONTINUE LES RISQUES D'INCEIE N'UTILISER QUE DES FUSIBLE DE MEME TYPE 5A 125V(F3801) ET 10A 125V(F3802).

CAUTION: F3802 IS MANUFACTURED BY SKYGATE CO.,LTD, TYPE 20N.

PCB020
VPB164

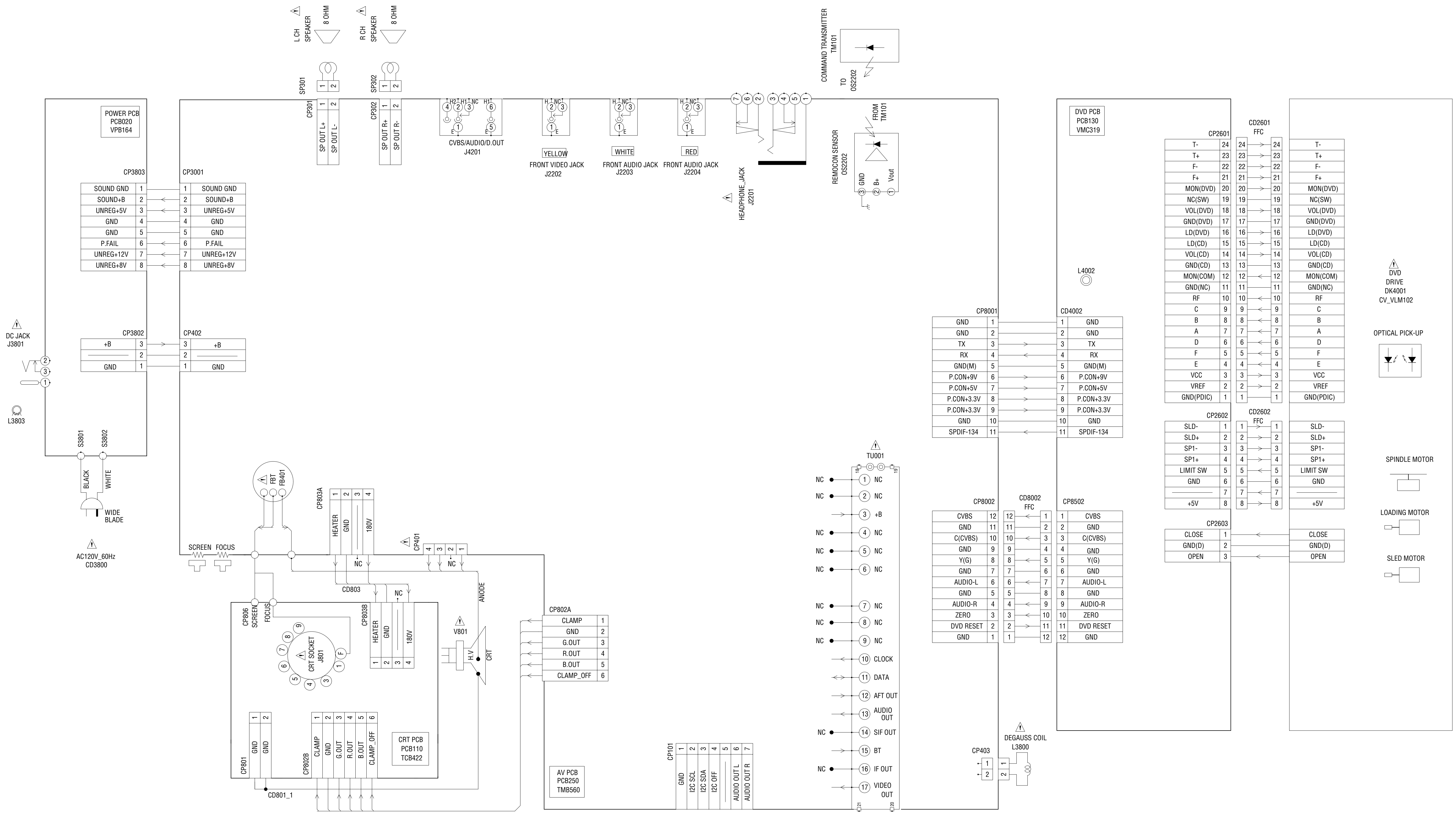
RELAY/SW/FG SCHEMATIC DIAGRAM



NOTE: THIS SCHEMATIC DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE。

NOTE: THE DC VOLTAGE AT EACH PART WAS MEASURED WITH THE DIGITAL TESTER WHEN THE COLOR BROADCAST WAS RECEIVED IN GOOD CONDITION AND PICTURE IS NORMAL.

INTERCONNECTION DIAGRAM



NOTE: THIS INTERCONNECTION DIAGRAM IS THE LATEST AT THE TIME OF PRINTING AND SUBJECT TO CHANGE WITHOUT NOTICE 。

ATTENTION: LES PIECES REPAREES PAR UN ⚠ ETANT DANGEREUSES AN POINT DE VUE SECURITE N'UTILISER QUE CELLS DECRITES DANS LA NOMENCLATURE DES PIECES。

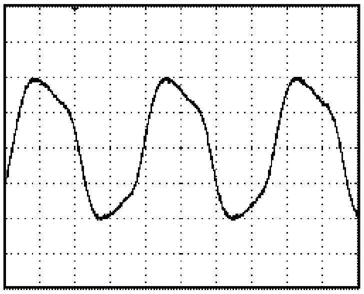
CAUTION: SINCE THESE PARTS MARKED BY ⚠ ARE CRITICAL FOR SAFETY,USE ONES DESCRIBED IN PARTS LIST ONLY 。

WAVEFORMS

MPEG/MICON

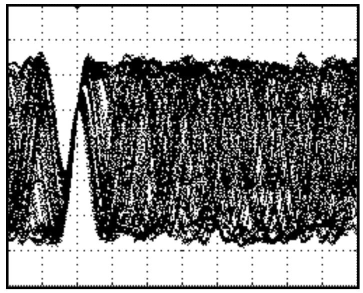
10ns
100mV

①



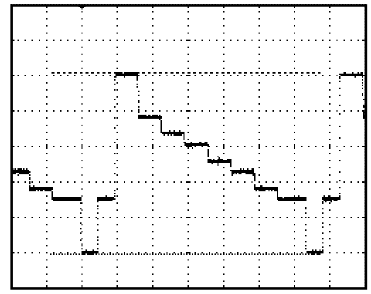
200ns
100mV

⑤



100µs
200mV

⑨



100ns
100mV

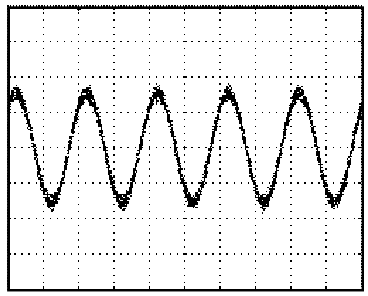
②



AUDIO/VIDEO

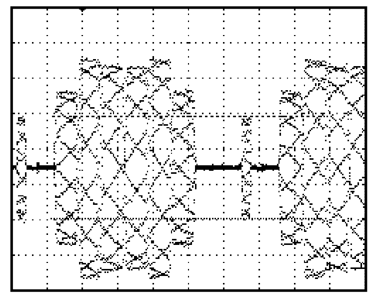
500µs
500mV

⑥



10µs
100mV

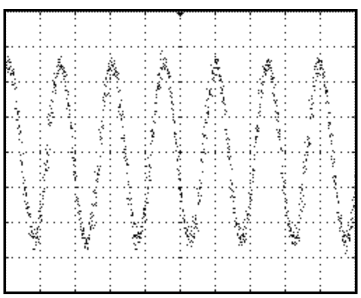
⑩



MEMORY

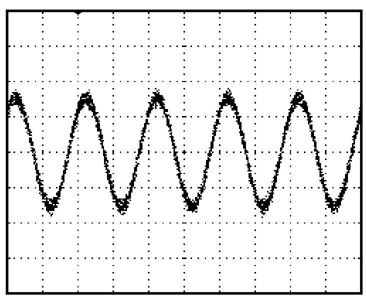
5ns
200mV

③



500µs
500mV

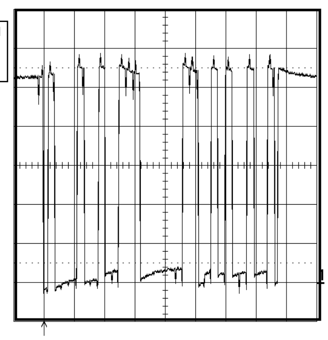
⑦



MICON/TUNER

POWER ON
0.2ms
1V

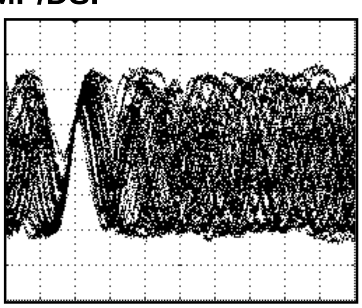
㉒



RF AMP/DSP

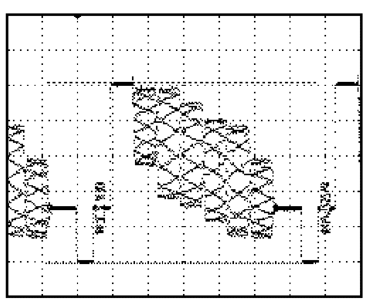
200ns
500mV

④



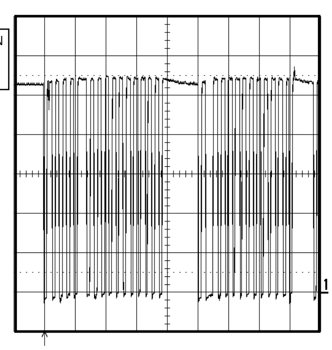
10µs
200mV

⑧



POWER ON
0.2ms
1V

㉓

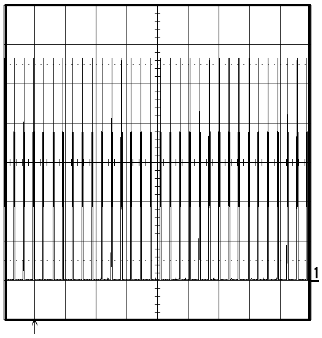


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

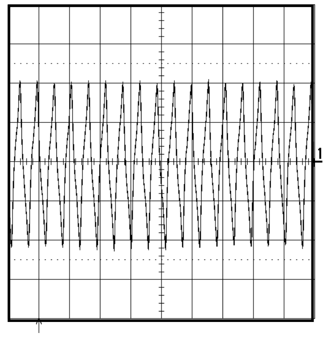
POWER ON
0.2ms
1V

24



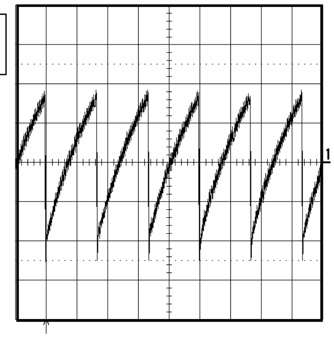
STANDBY
0.5µs
50mV

28



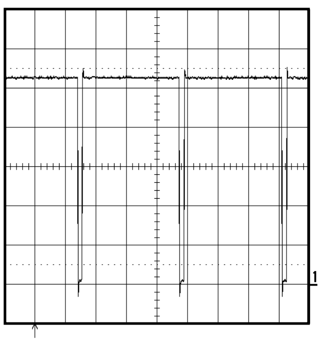
POWER ON
10ms
0.5V

32



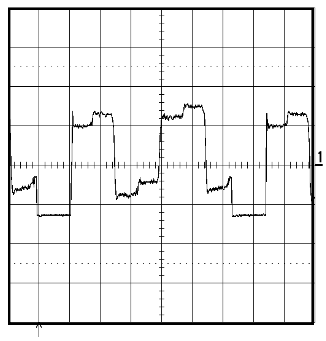
POWER ON
5ms
1V

25



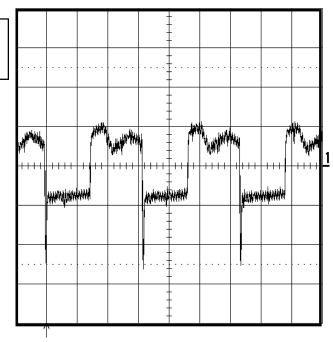
POWER ON
10µs
2V

29



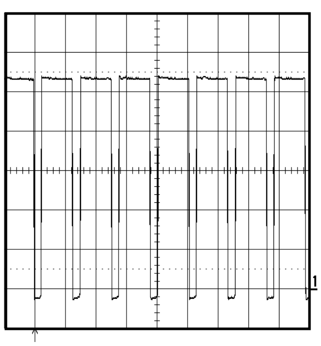
POWER ON
20µs
0.5V

33



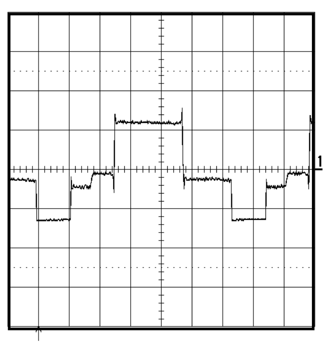
POWER ON
50µs
1V

26



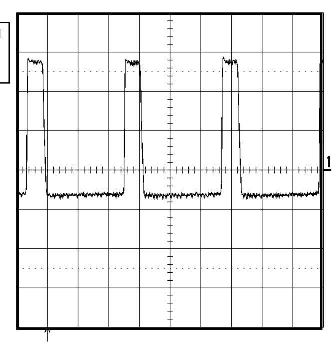
POWER ON
10µs
2V

30



POWER ON
20µs
2V

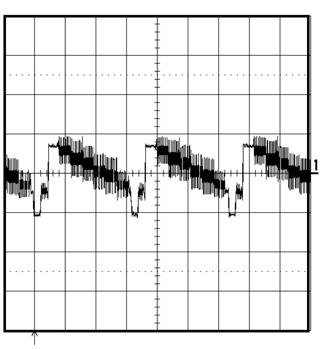
34



CHROMA

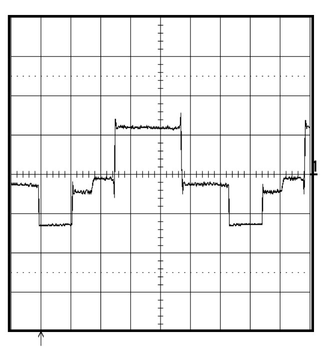
POWER ON
20µs
0.5V

27



POWER ON
10µs
2V

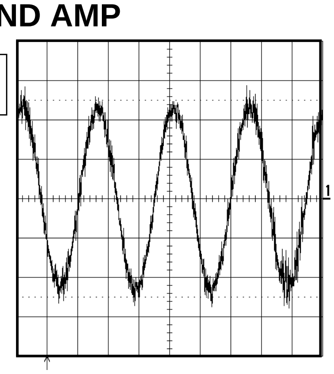
31



SOUND AMP

POWER ON
1ms
100mV

35

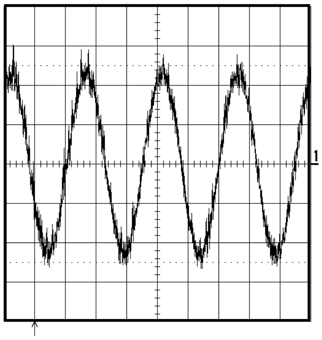


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

WAVEFORMS

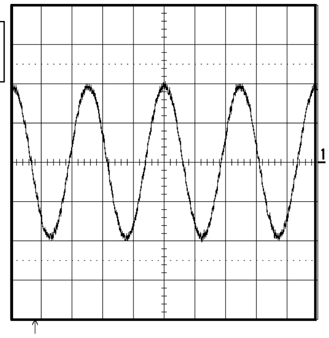
1ms
100mV

(36)



POWER ON
1ms
200mV

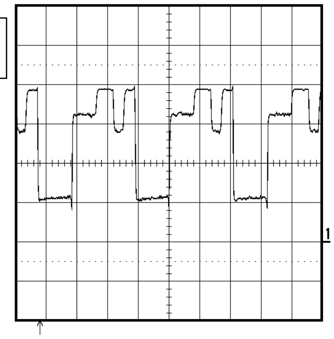
(41)



CRT

POWER ON
20µs
50V

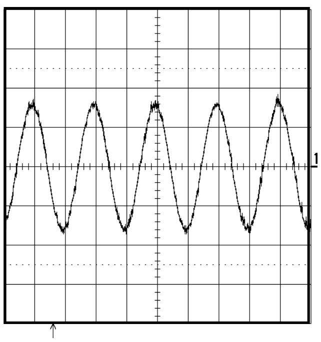
(45)



IN/OUT

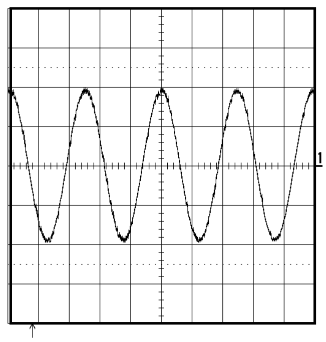
DVD PLAY
0.5ms
200mV

(37)



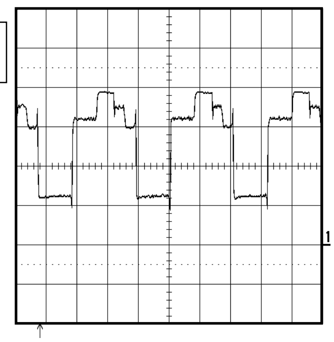
POWER ON
1ms
200mV

(42)



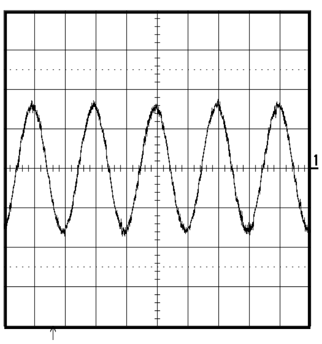
POWER ON
20µs
50V

(46)



DVD PLAY
0.5ms
200mV

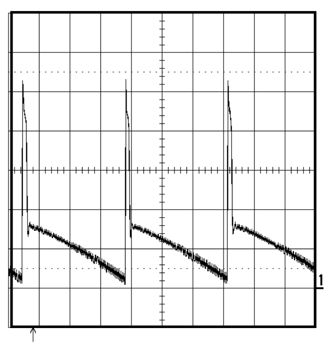
(38)



DEFLECTION

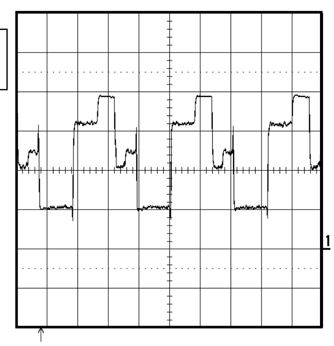
POWER ON
5ms
10V

(43)



POWER ON
20µs
50V

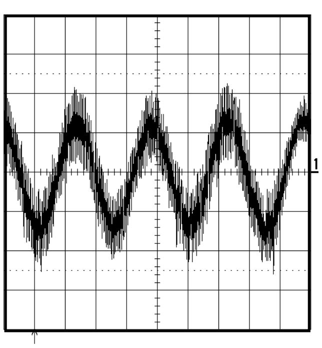
(47)



STEREO

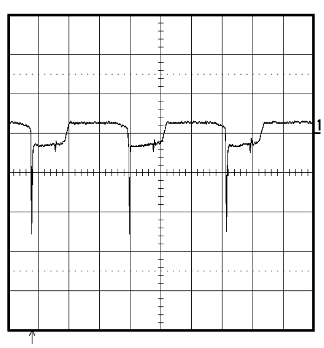
POWER ON
1ms
50mV

(40)



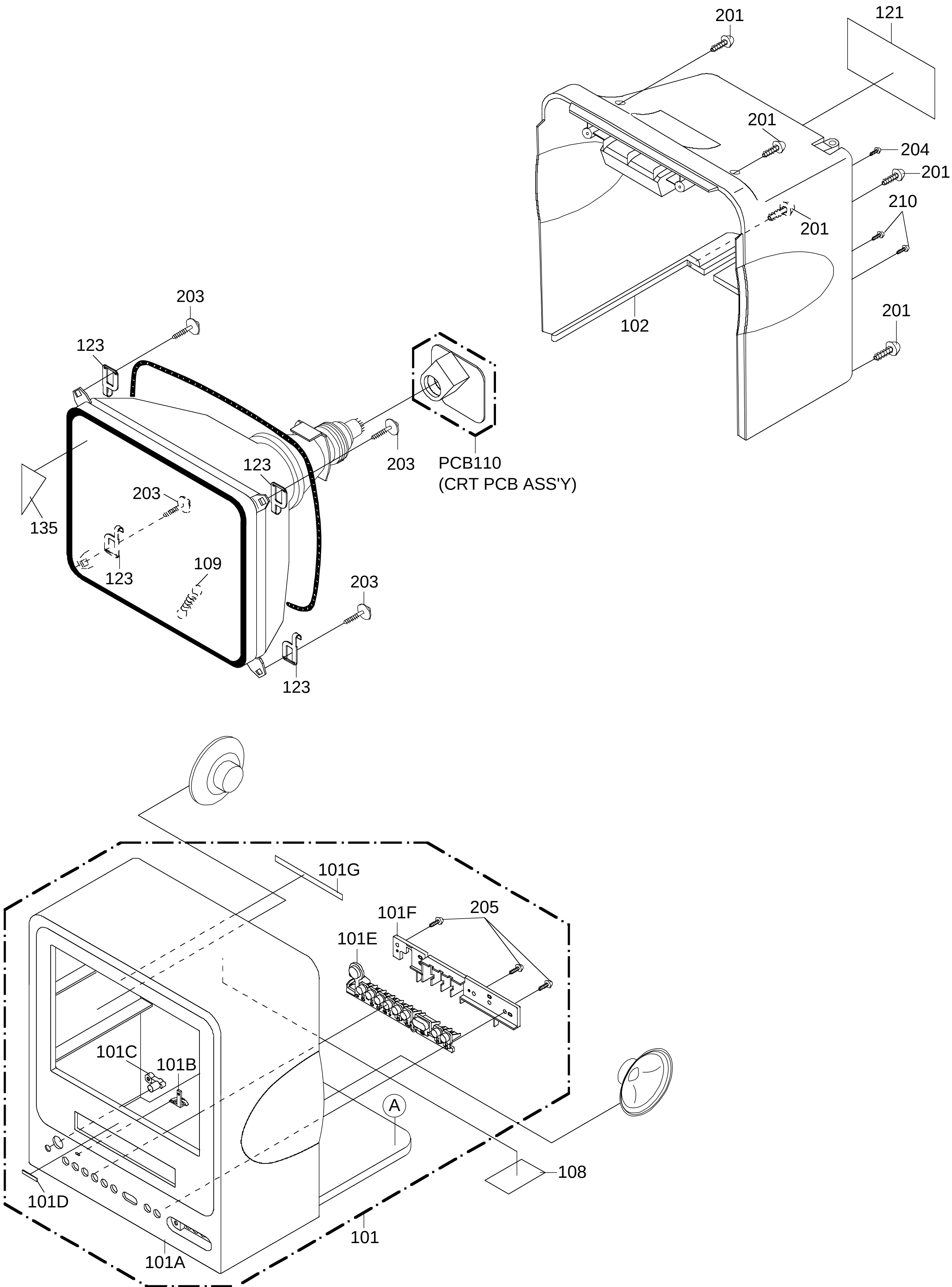
POWER ON
20µs
5V

(44)

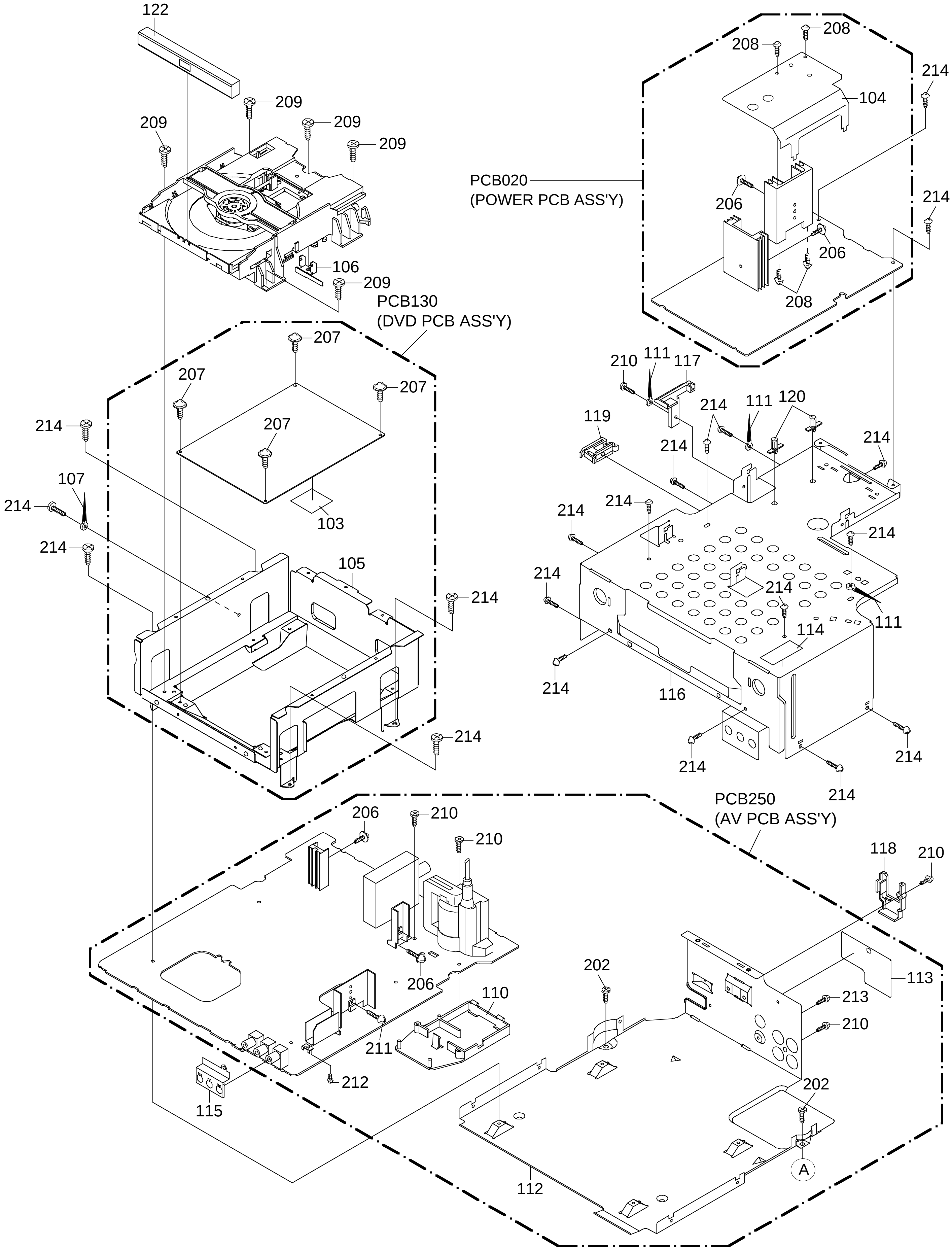


NOTE: The following waveforms were measured at the point of the corresponding balloon number in the schematic diagram.

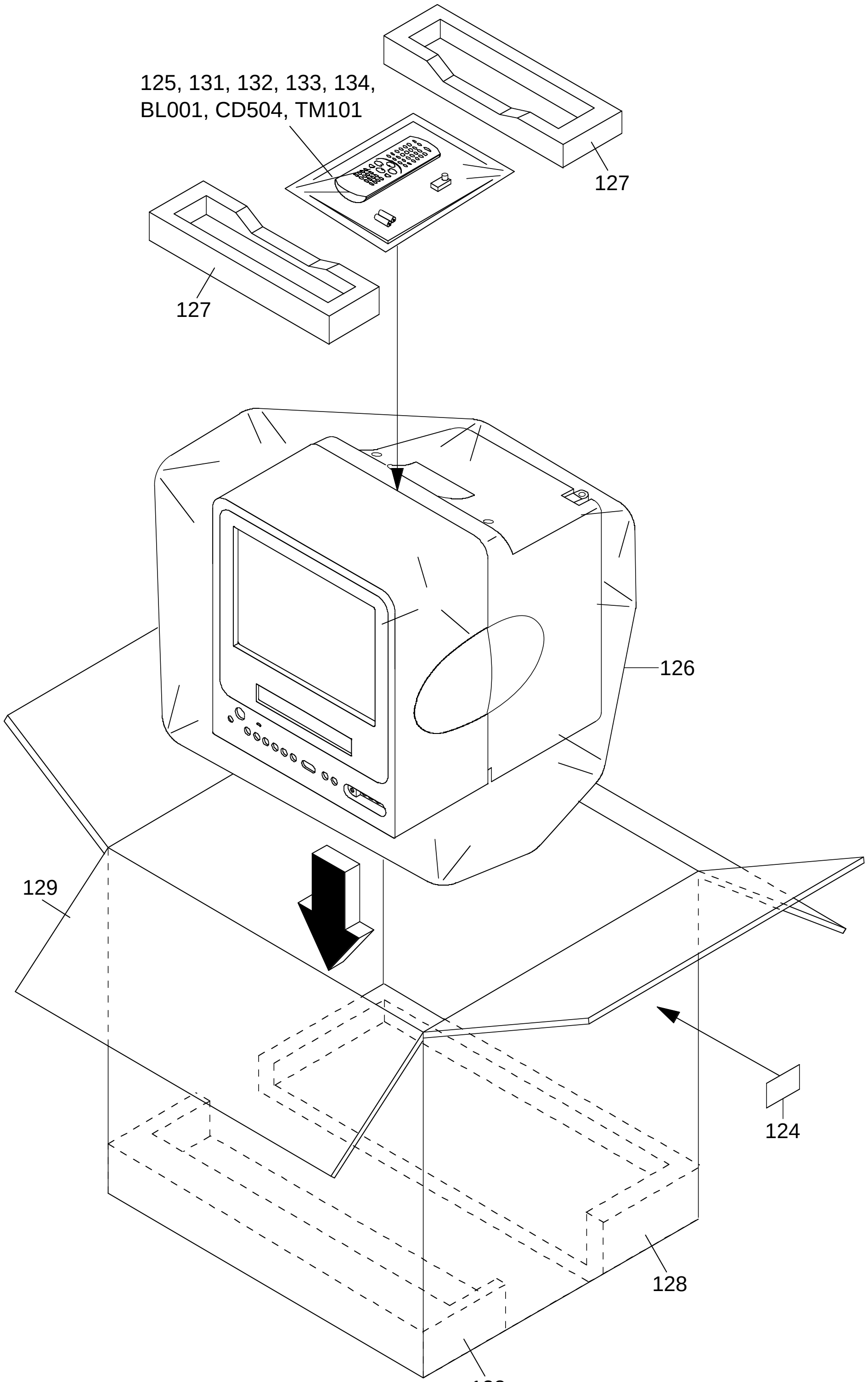
MECHANICAL EXPLODED VIEW



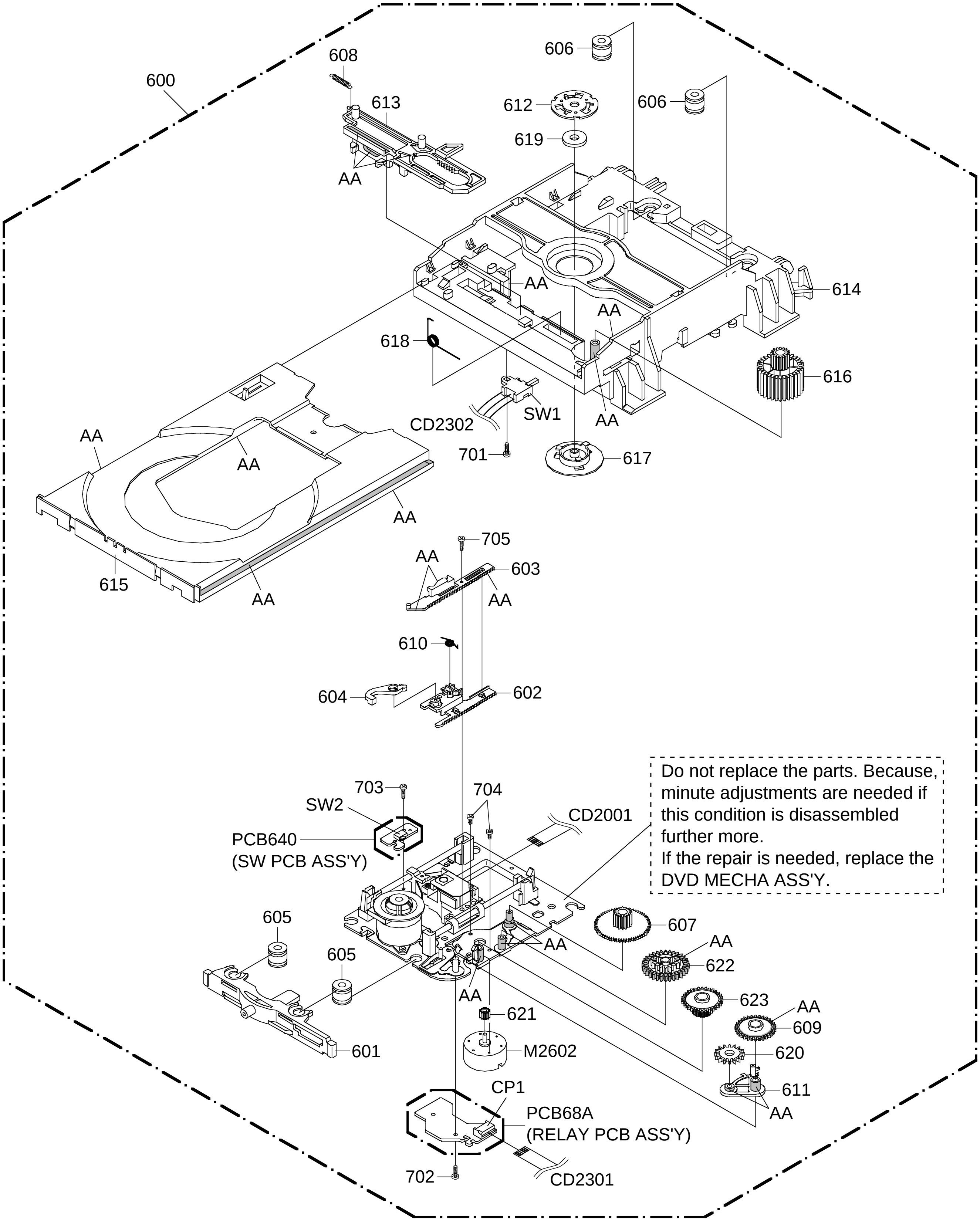
MECHANICAL EXPLODED VIEW



MECHANICAL EXPLODED VIEW
(PACKING DIAGRAM)



DVD DECK EXPLODED VIEW



CLASS	MARK
GREASE	AA

NOTE: Applying positions AA for the grease are displayed for this section.
Check if the correct grease is applied for each position.

MECHANICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
101	AE003132	7A701A029A	FRONT CABI ASS'Y	
101A	AE003133	701WPJC512	CABINET,FRONT	
101B	AE001206	713WPA0259	GLASS,LED	
101C	AE001207	713WPA0260	GUIDE,REMOCON	
101D	AD302193	7235490034	BADGE,BRAND	
101E	AE003134	735WPBA962	BUTTON,FRAME	
101F	AE001209	738WPA0065	STOPPER,BUTTON	
101G	AE000174	800WQ00056	FELT SHEET	
102	AE003135	A5K201Q740	CABINET,BACK ASS'Y	
103	AE000754	7232020748	SHEET,IC	
104	AE001211	753WSA0159	SHIELD,TV MAIN PCB	
105	AE002897	761WSA0136	ANGLE,DECK	
106	AE002846	752WSA0384	ANGLE,DVD 2	
107	AD300758	899EFBA001	WIRING CLIP	
108	AE001214	7260000330	SHEET,CRT SERVICEMAN	
109	BZ710294	741WUA0002	SPRING,EARTH	
110	AE001215	761WPA0275	HOLDER,FBT	
111	BZ710039	8995034000	CORD CLIP UL CO.	
112	AE001216	702WSA0172	PLATE,BOTTOM	
113	AE001217	7230007621	SHEET,JACK	
114	AD301688	7260000341	SHEET,CAUTION	
115	BZ710671	752WSA0292	SHIELD,AV JACK	
116	AE001218	752WSA0312	SHIELD,TOP	
117	BZ710012	761WPA0151	HOLDER,M/PCB	
118	AE001219	761WPA0285	HOLDER,BUSH	
119	AE000164	774WPA0005	HOLDER,WIRE-2	
120	BZ710284	890PS70100	PUSH SPACER	
121	AE003136	722549A308	SHEET,RATING	
122	AE003137	712WPJB970	PLATE,TRAY-FRONT	
123	AE001222	762WPA0012	HOLDER,CRT WIRE	
124	AE003138	723000C473	SHEET,BAR CODE	
125	AE000116	725000A055	SHEET,CAR CORD	
126	AE000093	791WHA0090	LAMIFILM,BAG	
127	AE001225	792WHA0429	PACKAGE,TOP	
128	AE001226	792WHA0430	PACKAGE,BOTTOM	
129	AE003139	793WCDC071	GIFT BOX	
130	AE003140	A5K201Q975	INSTRUCTION BOOK KIT	
131	AE000060	JB5UD300	POLYBAG,INSTRUCTION(RED CAUTION)	
132	AE001184	J5F10129A	INFORMATION SHEET	
133	AE003141	J5K20101A	INSTRUCTION BOOK	
134	AD302404	J5500817	REGISTRATION CARD	
135	AE003493	723000C564	POP LABEL	
201	BZ710035	8117540A64	SCREW,TAPPING(B0) TRUSS	4x16
202	BZ710449	8117140804	SCREW,TAPPING(B) PAN	4x8
203	BZ710450	8141J40B84	SCREW,TAP TITE(P) GW15	4x28
204	BZ710031	8110630A04	SCREW,TAP TITE(P) BRAZIER	3x10
205	BZ710030	8110630804	SCREW,TAP TITE(P) BRAZIER	3x8
206	BZ710239	8109I30A04	SCREW,TAP TITE(B) WH7	3x10
207	BZ710562	8109I30804	SCREW,TAP TITE(B) WH7	3x8
208	BZ710019	8109630802	SCREW,TAP TITE(B) BRAZIER	3x8
209	AE002618	810F130804	SEMS(F)	3x8
210	BZ710678	8109230804	SCREW,TAP TITE(B) BIND	3x8
211	BZ710018	8107630804	SCREW,TAP TITE(S) BRAZIER	3x8
212	BZ710046	8102120604	SCREW,PAN	M2x6
213	AD301968	8107230404	SCREW,TAP TITE(S) BIND	3x4
214	AE001652	8109230604	SCREW,TAP TITE(B) BIND	3x6

DVD DECK REPLACEMENT PARTS LIST

	Location No.	TSB P/N	Reference No.	Description	
	600	AE003142	A2D001A650	DVD MECHA ASS'Y	A2D001A650
	601	AD301822	92P100022A	TRAVERSE HOLDER	
	602	AE002480	92P100080A	RACK,FEED 1A	
	603	AE002481	92P100081A	RACK,FEED 2A	
	604	AD301825	92P100035A	LEVER,RACK FEED	
	605	AD301826	92P200006A	INSULATOR(F)	
	606	AD301827	92P200007A	INSULATOR(R)	
	607	AD301846	92P100029A	GEAR,FEED	
	608	AE001179	92P300009A	SPRING,RACK L	
	609	AD301845	92P100028A	GEAR,MIDDLE 3	
	610	AE002482	92P300019A	SPRING,RACK FEED 1A	
	611	AE002179	92P100040A	ARM,IDLER 2	
	612	AD301833	92P000001A	CLAMPER PLATE	
	613	AD301834	92P100019A	RACK,LOADING	
	614	AD301835	92P100020A	MAIN FRAME M	
	615	AD301836	92P100021A	TRAY	
	616	AD301837	92P100023A	GEAR,MAIN	
	617	AE002647	92P100082A	CLAMPER 2	
	618	AD301839	92P300002A	SPRING,RACK LOADING	
	619	AD301840	92P400002A	MAGNET,CLAMPER	
	620	AD301847	92P100030A	GEAR,IDLER	
	621	AD301842	92P100025A	GEAR,MOTOR	
	622	AE002180	92P100083A	GEAR,MIDDLE 1	
	623	AD301844	92P100027A	GEAR,MIDDLE 2	
	701	BZ710187	8110226804	SCREW,TAP TITE(P) BIND	2.6x8
	702	AD301851	8110120604	SCREW,TAP TITE(P) PAN	2x6
	703	AD301852	8107220504	SCREW,TAP TITE(S) BIND	2x5
	704	AD301853	8140117254	SCREW,PAN	M1.7x2.5 P3
	705	AD301913	8110220804	SCREW,TAP TITE(P) BIND	2x8
	CD2001	AD301855	122H0O1901	CORD JUMPER	2H0O1901
	CD2301	AD301856	122H080701	CORD JUMPER	2H080701
	CD2302	AE000148	06CH232101	CORD CONNECTOR	CH232101
	CP1	AD301858	069JV80180	CONNECTOR PCB SIDE	IMSA-9615S-08C-PP-A
⚠	M2602	AD301861	1515S98001	FEED MOTOR	BCD3B81
	PCB640	AD301862	A5E601V640	PCB ASS'Y	BEC001A
	PCB68A	AD301863	A5E601V680	PCB ASS'Y	BEC002A
	SW1	AD301866	0515S32001	SWITCH	SSS-23-6
	SW2	AE001158	0500101036	PUSH SWITCH	ESE22MH22

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
			RESISTORS	
⚠R401	AD301016	R3X28A331J	R,METAL OXIDE	330 OHM 2W
⚠R402	BZ210280	R3X28A391J	R,METAL OXIDE	390 OHM 2W
R408	BZ210083	R3X28A010J	R,METAL OXIDE	1 OHM 2W
⚠R415	AD302063	R4X5T44R7F	R,METAL	4.7 OHM 1/4W
⚠R418	AE001200	R4X5T43R9F	R,METAL	3.9 OHM 1/4W
⚠R442	AD300419	R4X5T6223F	R,METAL	22K OHM 1/6W
⚠R444	AD300036	R4X5T6562F	R,METAL	5.6K OHM 1/6W
⚠R445	AD302182	R002T4153J	RC	15K OHM 1/4W
⚠R447	BZ210185	R65582151J	R,FUSE	150 OHM 1/2W
⚠R450	BZ210187	R65581100J	R,FUSE	10 OHM 1W
R803	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W
⚠R805	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W
R807	BZ210099	R3X181153J	R,METAL OXIDE	15K OHM 1W
R2344	AE002014	R002021R2J	RC	1.2 OHM 1/2W
R2345	AE002014	R002021R2J	RC	1.2 OHM 1/2W
⚠R3800	BZ210080	R0G3K2275K	RC	2.7M OHM 1/2W
⚠R3803	AE001199	R3X28A1R5J	R,METAL OXIDE	1.5 OHM 2W
⚠R3826	AD300651	R002T4272J	RC	2.7K OHM 1/4W
⚠R3830	BZ210192	R002T4223J	RC	22K OHM 1/4W
⚠R3831	BZ210206	R002T2155J	RC	1.5M OHM 1/2W
⚠R3835	BZ210188	R5Y2CD010J	R,CEMENT	1 OHM 5W
⚠R3837	BZ210190	R63581R22J	R,FUSE	0.22 OHM 1W
⚠R3843	AD300659	R3X181R47J	R,METAL OXIDE	0.47 OHM 1W
⚠R3847	BZ210217	R3X181331J	R,METAL OXIDE	330 OHM 1W
			CAPACITORS	
⚠C402	BZ110020	E5EZT8220M	CE	22 UF 100V
⚠C407	BZ110053	E02LF3102M	CE	1000 UF 25V
C414	BZ110085	P21503475K	CMP	4.7 UF 250V ECQ-E
⚠C421	BZ110055	E5EZF4102M	CE	1000 UF 35V
C423	AD301144	P4J7F3274J	CMPP	0.27 UF 250V PMS
⚠C428	AE001198	P4N8FJ752H	CMPP	0.0075UF 1.25KV
⚠C431	BZ110204	E0ELFD220M	CE	22 UF 250V
C802	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B
C3812	BZ110032	E5EZF3102M	CE	1000 UF 25V
C3813	BZ110091	E62FF3152M	CE	1500 UF 25V
C3814	BZ110091	E62FF3152M	CE	1500 UF 25V
C3817	BZ110176	C03L0R7Q2K	CC	470 PF 2KV R
⚠C3818	BZ110101	E5EZF3222M	CE	2200 UF 25V
C3819	AE001196	C0PLRR7B3K	CC	0.0012 UF 2KV R
⚠C3821	BZ110028	E5EZT2102M	CE	1000 UF 16V
⚠C3822	BZ110028	E5EZT2102M	CE	1000 UF 16V
⚠C3824	AE001197	E62FF2102M	CE	1000 UF 16V
⚠C3825	AD301025	E62NFB221M	CE	220 UF 160V
⚠C3826	BZ110025	P2122B224M	CMP	0.22 UF 275V ECQUL
⚠C3833	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B
⚠C3834	BZ110247	C0JBB0713K	CC	0.001 UF 2KV B
⚠C3835	AD301635	E51CGC331M	CE	330 UF 200V
C3838	BZ110191	C03L0R7E3K	CC	0.0015UF 2KV R
⚠C3842	AE002878	CD39E0MQ3M	CC	0.0047UF 250V
			DIODES	
D101	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D102	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D103	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D105	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D106	BZ410061	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D107	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D401	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
⚠D402	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D403	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D404	BZ410019	D97U03001B	DIODE,ZENER	MTZJ30B T-77
D405	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D406	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D407	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D408	AD300731	D2WXN49370	DIODE,SILICON	1N4937
⚠D409	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D410	BZ410022	D97U06R81B	DIODE,ZENER	MTZJ6.8B T-77
⚠D411	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D412	BZ410037	D97U03301B	DIODE,ZENER	MTZJ33B T-77
⚠D413	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D414	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D415	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.		Description
			DIODES	
⚠D416	BZ410020	D97U05R11B	DIODE,ZENER	MTZJ5.1B T-77
D603	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D801	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D802	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D803	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D901	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D2201	BZ410087	0021E2Q140	LED	LTL-1CHEE-002A
D2601	BZ410121	DDARDS1200	DIODE,SILICON	KDS120RTK
D3007	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D3801	BZ410043	D2WT011E10	DIODE,SILICON	11E1-EIC
D3802	BZ410067	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D3803	BZ410061	D97U01001B	DIODE,ZENER	MTZJ10B T-77
D3804	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3805	BZ410067	D97U02R21B	DIODE,ZENER	MTZJ2.2B T-77
D3806	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
D3807	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3808	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3809	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3810	BZ410018	D94TA27011	DIODE,ZENER	HZ27-1L TD
D3811	BZ410014	D2LTPG06J0	DIODE,SILICON	RMPG06J-G3
D3812	BZ410066	D97U06R21B	DIODE,ZENER	MTZJ6.2B T-77
D3813	BZ410065	D97U01601B	DIODE,ZENER	MTZJ16B T-77
D3814	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D3815	AD300731	D2WXN49370	DIODE,SILICON	1N4937
⚠D3816	BZ410115	D2LKB340L0	DIODE,SCHOTTKY	SB340L-6737
⚠D3817	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3818	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3819	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3820	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3821	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3822	BZ410115	D2LKB340L0	DIODE,SCHOTTKY	SB340L-6737
D3823	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D3824	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
⚠D3825	BZ410080	D2WXRU2AM0	DIODE,SILICON	RU2AM-EIC
⚠D3826	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3827	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3828	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3829	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
⚠D3830	AD300731	D2WXN49370	DIODE,SILICON	1N4937
⚠D3831	BZ410010	D28T21DQN9	DIODE,SCHOTTKY	21DQ09N-TA2B1
D3832	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
⚠D3833	BZ410008	D23U1003A3	DIODE,SCHOTTKY	SB10-03A3
D3838	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3839	BZ410021	D97U05R61B	DIODE,ZENER	MTZJ5.6B T-77
⚠D3840	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D3841	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D3842	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
⚠D3843	BZ410085	D2WXN40050	DIODE,SILICON	1N4005-EIC
D3844	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3845	AD300671	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D3846	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3847	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3849	BZ410006	D1VT001330	DIODE,SILICON	1SS133T-77
D3850	AD300671	D97U01801B	DIODE,ZENER	MTZJ18B T-77
D3851	AD300731	D2WXN49370	DIODE,SILICON	1N4937
D3852	BZ410014	D2LTPG06J0	DIODE,SILICON	RMPG06J-G3
D4001	BZ410119	DDDRL41480	DIODE,SILICON	MCL4148
			ICS	
IC101	AE002888	I55D06079A	IC	OEC6079A
IC103	AD301641	I9UF032310	IC	PST3231NR
IC199	AE003143	A5K201Q255	IC	S-24C04BDP-LA
⚠IC301	BZ611141	I0FDP75120	IC	AN7512
⚠IC401	AE002783	I03TD804N0	IC	LA78040N-E
IC601	AD301765	I03FC63190	IC	LA76319M-MPB-E
IC902	AD300059	I01FF58290	IC	AN5829S
IC903	BZ611104	I0QF02533V	IC	NJM2533V(TE2)
IC904	BZ611104	I0QF02533V	IC	NJM2533V(TE2)
IC2301	BZ611126	I03F065600	IC	LA6560
IC2601	AE002837	ICQK067080	IC	ZR36708TQC
IC2602	AD301770	I07E00358F	IC	BA10358F-E2
⚠IC3001	BZ611015	I1KA97805A	IC	KIA7805API

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			ICS	
⚠IC3002	BZ611015	I1KA97805A	IC	KIA7805API
⚠IC3005	BZ611033	I1KA97809A	IC	KIA7809API
⚠IC3802	BZ611096	I0QD023680	IC	NJM2368D
⚠IC3803	AD301771	000220001W	PHOTO COUPLER	PS2561L1-1-V(W)
IC4001	AE000842	ICQK067620	IC	ZR36762
IC4002	BZ611124	I5HJ004BF0	IC	S-24C04BFJ-TB
IC4003	BZ611130	I0GF9XZ010	IC	PQ070XZ01ZP
IC4005	AE000843	IF9J0164A7	IC	M12L64164A-7T
IC4007	BZ611129	ICMJ0800A7	IC	SST39VF800A-70-4C-EK
IC4201	AE001295	I0QJ045800	IC	NJM4580M(TE1)
IC4202	AE001069	I0UF015020	IC	MM1502XNRE
IC8502	AE002835	I17F02KEG0	IC	PCM1742KEG/2K
			TRANSISTORS	
Q105	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q106	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q301	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q302	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q305	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q401	BZ510004	TA3T016240	TRANSISTOR,SILICON	2SA1624-AA
⚠Q402	BZ510052	TF2002P4M0	THYRISTOR	2P4M
Q403	BZ510025	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
⚠Q405	BZ510097	TCAT03227Y	TRANSISTOR,SILICON	KTC3227_Y-AT
⚠Q406	AD301779	TD3Q021400	TRANSISTOR,SILICON	TT2140LS-YBC11
Q601	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q602	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q605	BZ510025	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
⚠Q804	AD300674	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT
⚠Q805	AD300674	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT
⚠Q806	AD300674	TCAT032070	TRANSISTOR,SILICON	KTC3207-AT
Q901	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q902	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q2201	BZ510021	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q2601	BZ510112	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT146
Q2602	BZ510112	T67J1036K0	TRANSISTOR,SILICON	2SA1036KT146
Q2603	BZ510113	T27T030180	FET	2SK3018
Q2604	BZ510113	T27T030180	FET	2SK3018
Q2605	BZ510113	T27T030180	FET	2SK3018
⚠Q3000	BZ510057	TAAT01281Y	TRANSISTOR,SILICON	KTA1281_Y
Q3001	BZ510020	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
Q3002	BZ510105	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
⚠Q3003	AD301934	TBA0013660	TRANSISTOR,SILICON	KTB1366(O,Y)
⚠Q3004	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
⚠Q3005	BZ510105	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
⚠Q3006	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q3007	BZ510057	TAAT01281Y	TRANSISTOR,SILICON	KTA1281_Y
⚠Q3008	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q3009	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q3010	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q3012	BZ510081	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146
Q3013	BZ510020	TNYJB05001	COMPOUND TRANSISTOR	DTC114EKAT146
⚠Q3802	BZ510105	TCAT03209Y	TRANSISTOR,SILICON	KTC3209_Y-AT
Q3803	BZ510096	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
⚠Q3804	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q3805	BZ510077	TAAT012714	TRANSISTOR,SILICON	KTA1271_Y-AT
Q3806	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q3807	BZ510053	T410029030	FET	2SK2903-01MR
Q3808	BZ510096	TNATB03005	COMPOUND TRANSISTOR	KRC102MAT
Q3810	BZ510069	TCATC31980	TRANSISTOR,SILICON	KTC3198-AT(Y,GR)
⚠Q3811	BZ510093	TJXG5NC500	FET	STP5NC50FP
⚠Q3812	BZ510070	TCAT032034	TRANSISTOR,SILICON	KTC3203_Y-AT
Q4004	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4201	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4203	BZ510045	TNYJD05001	COMPOUND TRANSISTOR	DTC144EKAT146
Q4204	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4205	BZ510025	TPYJB05001	COMPOUND TRANSISTOR	DTA114EKAT146
Q4206	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4207	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q4208	BZ510073	TAATA12660	TRANSISTOR,SILICON	KTA1266-AT(Y,GR)
Q4209	BZ510021	TNYJC05001	COMPOUND TRANSISTOR	DTC124EKAT146
Q4210	BZ510081	TPYJA05001	COMPOUND TRANSISTOR	DTA143EKAT146
Q4211	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			TRANSISTORS	
Q4212	BZ510109	TCAA3875SY	TRANSISTOR,SILICON	KTC3875S_Y_RTK
Q8502	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q8503	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
Q8504	BZ510108	TAAA1504SY	TRANSISTOR,SILICON	KTA1504S_Y_RTK
			COILS &TRANSFORMERS	
L001	BZ310156	021375101K	COIL	100 UH
L101	BZ310030	021LA6560K	COIL	56 UH
L401	BZ310004	021679472K	COIL	4.7 MH
L601	BZ310041	02167F101J	COIL	100 UH
L602	BZ310156	021375101K	COIL	100 UH
L801	AD301781	021673560K	COIL	56 UH
L902	BZ310041	02167F101J	COIL	100 UH
L904	BZ310041	02167F101J	COIL	100 UH
L3001	AD301785	02167E100K	COIL	R6-1 10 UH
L3002	AD301785	02167E100K	COIL	R6-1 10 UH
⚠ L3800	AE001185	028R090009	COIL,DEGAUSS	VRK224-045-15B
L3801	BZ310083	021767100K	COIL	10 UH
⚠ L3802	BZ310099	029T000092	COIL,LINE FILTER	1R0A103F24
L3803	BZ310181	02A6B2E0A1	CORE,FERRITE	HF70T22*10*14
L4001	BZ310191	02167F2R2J	COIL	2.2 UH
L4002	BZ310118	02AHB9A972	CORE,FERRITE	W5T29X7.5X19
L4201	BZ310041	02167F101J	COIL	100 UH
L4202	BZ310041	02167F101J	COIL	100 UH
L4203	BZ310041	02167F101J	COIL	100 UH
L4204	BZ310002	021673101K	COIL	100 UH
L8502	AE000828	02167F1R0K	COIL	1 UH
L8503	AE000828	02167F1R0K	COIL	1 UH
L8504	AE000828	02167F1R0K	COIL	1 UH
T401	BZ310157	045009003J	TRANS,HORIZONTAL DRIVE	ETH09K14BZ
⚠ T3801	BZ310135	0481350574	TRANSFORMER,SWITCHING	81350574
⚠ T3802	AE001187	0481291124	TRANSFORMER,SWITCHING	81291124
			JACKS	
⚠ J801	AD301147	066F120018	SOCKET,CATHODE RAY TUBE	ISMS01S
⚠ J2201	BZ614361	060J131015	HEADPHONE JACK	MSJ-2000
J2202	AE002949	060J421036	RCA JACK	MTJ-032-05A-30-FE
J2203	AE002950	060J421037	RCA JACK	MTJ-032-05A-32-FE
J2204	AE002951	060J421030	RCA JACK	MTJ-032-05A-31-FE
⚠ J3801	BZ614145	0602602006	JACK DC	HEC0824-010010
J4201	AD301543	060J411025	RCA JACK	MSP-244V10-44PBSN
			SWITCHES	
SW2213	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2214	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2215	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2216	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2217	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2218	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2219	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2220	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2221	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
SW2223	BZ612010	0504101T34	SWITCH,TACT	EVQ21505R
			VARIABLE RESISTORS	
VR401	AE001201	V1K63Q3BTE	VOLUME,SEMI FIXED	NVG6TLTAB472
VR3801	AD301937	V1K6314BTE	VOLUME,SEMI FIXED	NVG6TLTAB103
VR3802	BZ210068	V1163Q3BTC	VOLUME,SEMI FIXED	EVNCYAA03BQ3
			P.C.BOARD ASSEMBLIES	
PCB020	AE003144	A5K201Q020	PCB ASS'Y	VPB164A
PCB110	AE003145	A5K201Q110	PCB ASS'Y	TCB422A
PCB130	AE003146	A5K201Q130	PCB ASS'Y	VMC319A
PCB250	AE003147	A5K201Q250	PCB ASS'Y	TMB560A
			MISCELLANEOUS	
B401	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B2601	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B2602	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B2603	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B2604	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B2605	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B3801	BZ310129	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3802	BZ310129	024HT03564	CORE,BEADS	W4BRH3.5X6X1.0
B3803	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3804	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B3805	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2

ELECTRICAL REPLACEMENT PARTS LIST

Location No.	TSB P/N	Reference No.	Description	
			MISCELLANEOUS	
B3806	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B4001	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4002	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4003	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4004	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4005	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4006	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4007	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4008	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4009	BZ310122	024HT03563	CORE,BEADS	W4BRH3.5X6X1.0X2
B4010	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B4201	BZ310121	024HT03553	CORE,BEADS	W5RH3.5X5X1.0
B8502	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
B8503	BZ310186	024HC31022	CORE,BEADS	FCM2012H-102T04
BL001	BZ310014	023C00022A	COIL,BALUN	HPN-01
BT001	AE000012	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
BT002	AE000012	1412004008	BATTERY,MANGAN	R03(AB)E_2P_G
CD504	BZ614196	121B164101	CORD,CAR BATTERY	SI-PC107-67
CD802	BZ614404	WDL6032038	FLAT CABLE	AWM2468 AWG26 6C BLACK 320MM
CD803	AE001202	WBL6030038	FLAT CABLE	AWM2468 AWG26 4C BLACK 300MM
CD805	BZ614175	06CU82039A	CORD,CONNECTOR	SM1098-009-1A
CP101	AE001188	069S270639	CONNECTOR PCB SIDE	A2001WR2-7P
CP301	AD301495	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2
CP302	AD301495	069W120019	CONNECTOR PCB SIDE	TID-X02P-B2
⚠CP401	BZ614154	069X440029	CONNECTOR PCB SIDE	B04B-DVS
CP402	BZ614349	067U003029	WIRE HOLDER	B2013H02-3P
CP403	AD300687	069S420110	CONNECTOR PCB SIDE	A1561WV2-2P
CP801	BZ614269	069S320010	CONNECTOR PCB SIDE	A2361WV2-2P
CD3001	AE001203	WFL6022038	FLAT CABLE	AWM2468 AWG26 8C BLACK 220MM
⚠CD3801	AD300685	120R414903	CORD,AC BUSH	0R414903
CD4002	BZ614299	06CU2B2001	CORD,CONNECTOR	CU2B2001
CD8501	AD301792	122H0C1001	CORD,JUMPER	2H0C1001
CP2601	AD302396	069JYOT099	CONNECTOR PCB SIDE	IMSA-9631S-24Y901
CP2602	AD301858	069JV80180	CONNECTOR PCB SIDE	IMSA-9615S-08C-PP
CP2603	AD301795	069S230639	CONNECTOR PCB SIDE	A2001WR2-3P
CP3001	AD301944	067U008029	WIRE HOLDER	B2013H02-8P
CP3802	AD300101	069R230589	CONNECTOR PCB SIDE	52147-0310
CP3803	AD301948	069R280589	CONNECTOR PCB SIDE	
CP8001	BZ614214	069S2B0629	CONNECTOR PCB SIDE	A2001WV2-11P
CP8002	AD301797	069J7C0029	CONNECTOR PCB SIDE	IMSA-9604S-12Z14
CP802A	BZ614333	067U006049	WIRE HOLDER	B2013H02-6P
CP802B	BZ614333	067U006049	WIRE HOLDER	B2013H02-6P
CP803A	BZ614334	067U004029	WIRE HOLDER	B2013H02-4P
CP803B	BZ614334	067U004029	WIRE HOLDER	B2013H02-4P
CP8502	AD301798	069J7C0019	CONNECTOR PCB SIDE	IMSA-9604S-12Z13
CUS013	BZ710149	800WFAA008	CUSHION C	
EL001	BZ614044	124120301A	EYE LET	XRY20X30BD
EL002	BZ614043	124116281A	EYE LET	XRY16X28BD
EL003	BZ614044	124120301A	EYE LET	XRY20X30BD
EL004	BZ614043	124116281A	EYE LET	XRY16X28BD
⚠F3801	BZ614504	081PC05005	FUSE	51MS050L
⚠F3802	BZ614277	0835C10003	MICRO FUSE	20N_10KFS
⚠FB401	AE001186	043210014F	TRANSFORMER,FLYBACK	FNI-10B001
FH3801	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
FH3802	AE002634	06710T0009	HOLDER,FUSE	EYF-52BCY
OS2202	AE001189	077Q037007	REMOTE RECEIVER	PIC-37143SY-H
⚠RY3801	BZ612011	0560V10118	RELAY	ALKS325
⚠SP301	BZ614428	070C132019	SPEAKER	SA08A05BWC
⚠SP302	BZ614428	070C132019	SPEAKER	SA08A05BWC
TM101	AD301799	076D0GD010	TRANSMITTER	TOT201N09160
⚠TU001	AE000273	0163300005	RF UNIT	115-V-K015AR_B
⚠V801	AE001190	0981100405	CRT W/DY	A22JWG098X82
X101	BZ613019	1002T01606	CERAMIC OSCILLATOR	CSTLS16M0X53-A0
X601	AD302003	100CT3R505	CRYSTAL	HC-49/C
X4001	AD301803	100BT02701	CRYSTAL	HC-49U/S

ELECTRICAL REPLACEMENT PARTS LIST

RESISTOR

RC.................. CARBON RESISTOR

CAPACITORS

CC.................. CERAMIC CAPACITOR
CE.................. ALUMI ELECTROLYTIC CAPACITOR
CP.................. POLYESTER CAPACITOR
CPP................. POLYPROPYLENE CAPACITOR
CPL................. PLASTIC CAPACITOR
CMP................. METAL POLYESTER CAPACITOR
CMPL................ METAL PLASTIC CAPACITOR
CMPP................ METAL POLYPROPYLENE CAPACITOR

TOSHIBA CORPORATION
1-1, SHIBAURA 1-CHOME, MINATO-KU, TOKYO 105-8001, JAPAN